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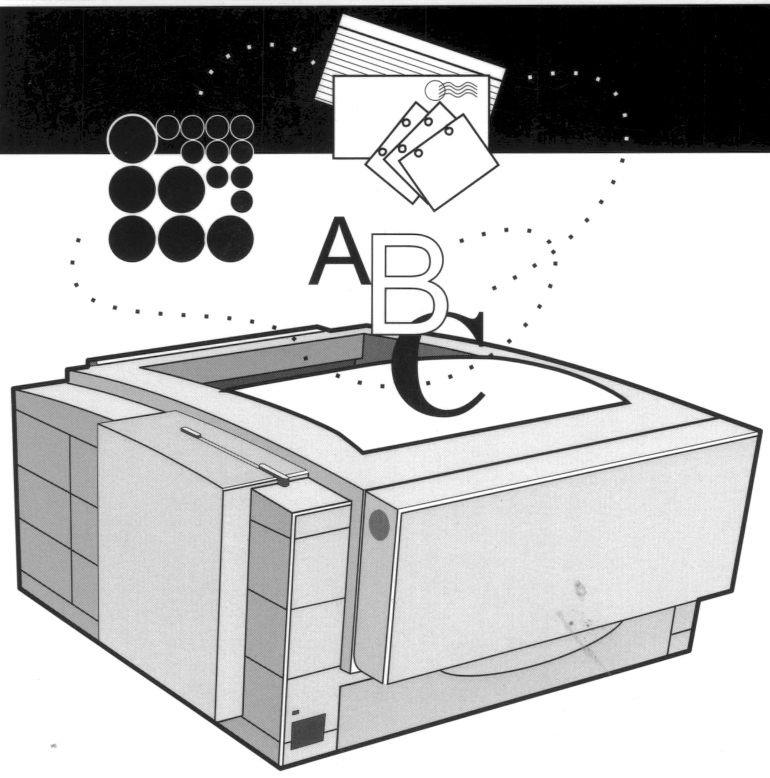

LaserJet

LaserJet

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LaserJet

LaserJet 5P & 5MP

User's Manual

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HP LaserJet 5P / 5MP Printer

User's Manual

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Publication number C3150-90901

First edition, May 1995

Printed in USA

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Conventions

This manual uses the following conventions:

Bold indicates emphasis or a minor heading.

Italic refers to a document title or is used for emphasis.

COMPUTER type indicates text visible on a computer screen.

The cursive letter *ℓ* is used in examples to distinguish the letter l from the numeral 1 (one). The character Ø is used in examples to distinguish the numeral 0 from the letter O.

Key Face indicates keys (such as **Shift**) on your computer keyboard.

Note Notes contain important information set off from the text.

Caution Caution messages appear before procedures which, if not observed, could result in loss of data or in damage to equipment.

Warning Warning messages alert you to a specific procedure or practice which, if not followed correctly, could cause serious personal injury.

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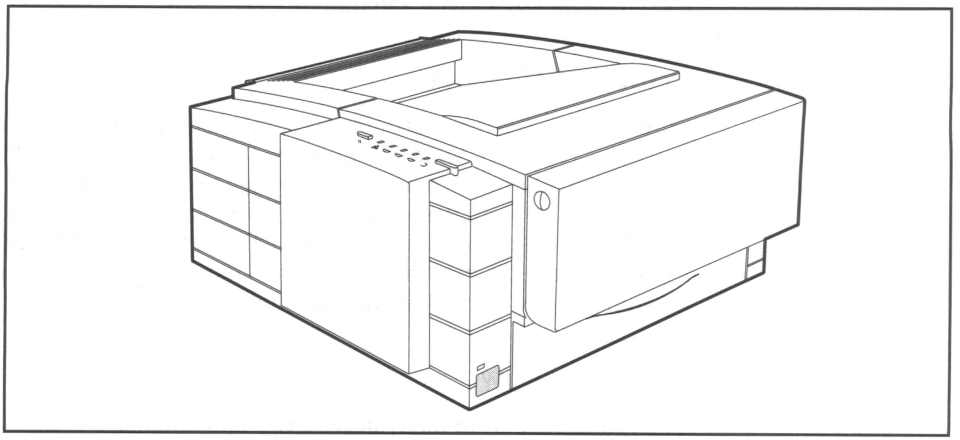
Getting Started

About Your HP LaserJet 5P / 5MP Printer

The HP LaserJet 5P / 5MP printer (Figure 1-1) provides you with laser printing that will enhance your productivity as well as your printed documents. This manual guides you through the features and operation of your printer. We hope you will find your printer easy to use and that it provides you with the satisfaction you would expect from a Hewlett-Packard product.

Figure 1-1



The HP LaserJet 5P / 5MP printer.

The HP LaserJet 5P printer uses HP's authentic Enhanced PCL 5 (Printer Command Language Level 5), a printer language that is standard for desk-top laser printing in PC operating environments, such as MS Windows or DOS.

The HP LaserJet 5MP printer also includes the Adobe PostScript Level 2 printer language used with Apple's Macintosh and is popular in areas such as publishing.

Print Quality

Your printer prints at true 600-by-600 dpi (dots per inch) enhanced with Resolution Enhancement technology (REt) and microfine toner providing crisp text, lines, and enhanced graphics or halftones to create great-looking documents.

Type Variety

You can choose from a wide variety of the most popular fonts to give your documents a professional appearance. HP's FontSmart font management tool allows you to customize and change your personal font selection quickly and easily in the Windows environment.

Paper Handling

With two standard input sources (Tray 1, a 100-sheet MultiPurpose tray, and Tray 2, a 250-sheet cassette tray) and a straight-through paper path, you can use a wide variety of paper types and sizes without having to change trays. This includes paper as thick as 42 pounds (158 g/m^2) and paper from 3-inches-by-5-inches (76 x 127 mm) to legal size (216 x 356 mm).

Printing Efficiency

Printing up to 6 pages-per-minute (ppm), your printer is driven by a powerful processor (20 MHz Motorola Coldfire MCF 5102, VL-RISC) and is supported by high-speed interfaces to help you stay ahead of your business printing needs. You can connect to more than one port at a time to share your printer with more than one user. The built-in, industry standard (IrDA compliant) infrared port is prepared to support "wireless" printing as more and more portable personal computing devices incorporate this communication technology.

Room to Grow

You can choose from many accessories and options to adapt your printer as your printing needs change over time.

Easy to Use

So you can get started printing quickly, your printer includes the HP LaserJet Printing System and driver software for key PC or Macintosh environments. You can easily control your printer from the PC, receive printer status information on your screen, and get on-line help if you encounter a printing problem.

The all-in-one toner imaging system not only ensures consistent print quality, it also offers a hassle free solution to printer maintenance.

Economical

EconoMode is a draft mode that reduces the amount of toner used by as much as 50%. Memory Enhancement technology (MEt) virtually doubles the amount of available memory for printing complex graphics. Multiple interface ports allow the printer to be used by more than one person, thus reducing cost per user. Intelligent

power management drastically reduces the amount of energy used during printing and non-printing.

Reduce, Reuse, Recycle

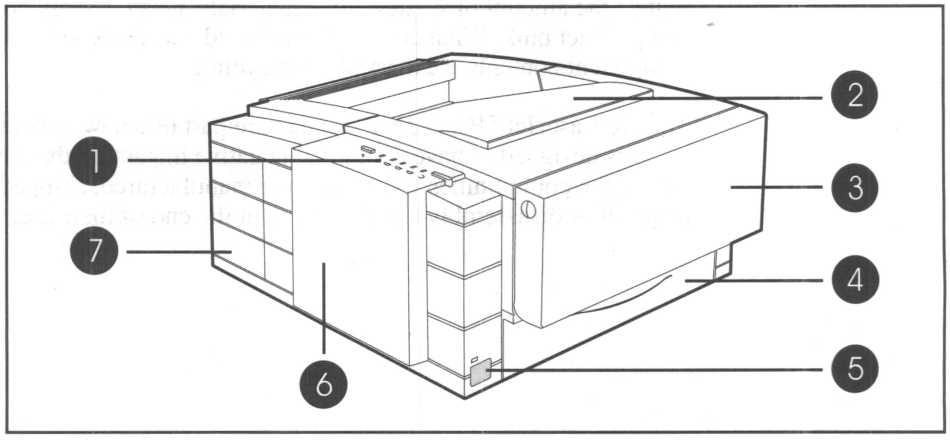
Using the "reduce, reuse, recycle" model, the printer was designed to fundamentally reduce the amount of wastes, toxic materials, noise, energy consumption, packaging and product bulk. What couldn't be reduced was designed to be reused, and the component contents are marked for recycling.

The HP LaserJet 5P and 5MP printers are part of a new generation of HP LaserJet printers designed to have a minimal negative impact on the environment of the office; the communities where they are manufactured, shipped, and used; and the disposal or disassembly site they go to at the end of their life.

Key Printer Parts

Figures 1-2 and 1-3 show the locations and names of key printer parts.

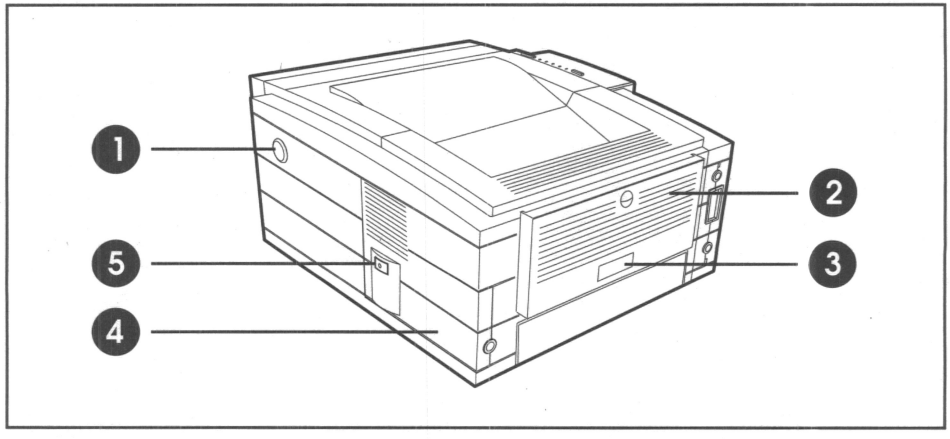
Figure 1-2



Front View

1. Status Panel
2. Top Output Tray
3. Tray 1 - MultiPurpose Tray
4. Tray 2 - 250-sheet Paper Cassette
5. Infrared Port and Status Light
6. Removable Side Panel
7. Interface Cable Door

Figure 1-3



Rear View

1. Top Cover Release Button
2. Rear Output Tray
3. Serial Number Label
4. Power Cable Door
5. On/Off Button

Setting Up Your Printer

To set up your printer, you need to complete the following tasks, which are described next in this section:

- Remove shipping retainers within the printer.
- Check the printer location to make sure that it meets all necessary operational requirements.
- Install the toner cartridge.
- Connect the printer to your computer.
- Attach the power cable.
- Load paper in Tray 2 (the Paper Cassette).
- Install the printer software. Depending on the computer and software you are using, you will install DOS, Windows PCL or Windows PostScript, or Macintosh printer software.

Note

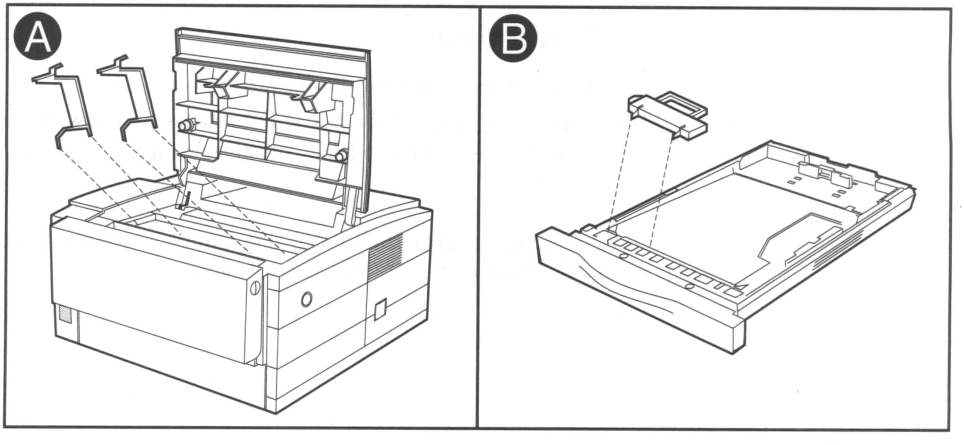
Also refer to your Quick Reference Card, included with the printer.

Remove Shipping Retainers

Check the following places inside the printer to make sure all shipping retainers have been removed from the printer. Otherwise, you may have trouble operating your printer.

- Follow the instructions provided on the box your printer was shipped in.
- Open the top of the printer by pressing the top cover release button, remove the two shipping retainers in the toner cartridge area (see a in Figure 1-4), and then close the top cover.
- Pull out Tray 2 (the Paper Cassette), remove the shipping retainer inside the tray (see b in Figure 1-4) by pressing down on the plastic piece and pulling it straight out, and then reinsert the tray.

Figure 1-4

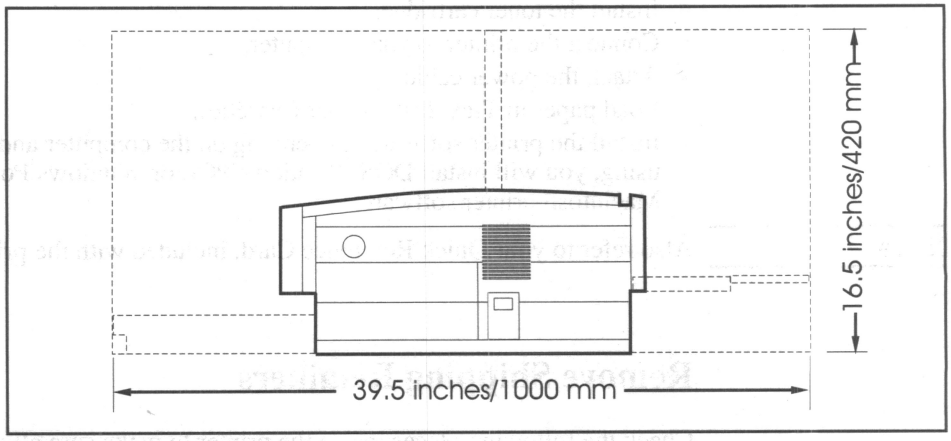


Check the Printer's Location

Place your printer on a sturdy, smooth, level surface in a well-ventilated room. Leave enough room around the printer to:

- Open the top door, Tray 1 (the MP tray), and the Rear Output Tray.
- Remove Tray 2 (the Paper Cassette).
- Turn the printer on and off, open the cable access doors, and remove the SIMM side panel (28 inches or 706 mm)

Figure 1-5



Setting up the printer.

Environment

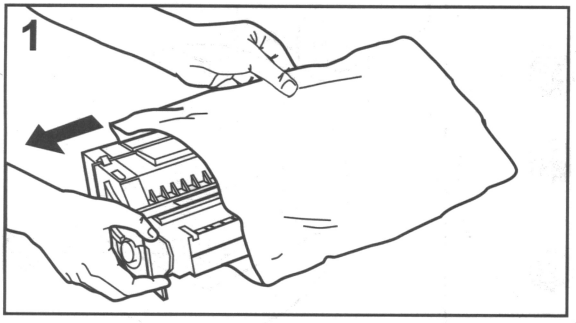
Put the printer in a well-ventilated room using the following guidelines:

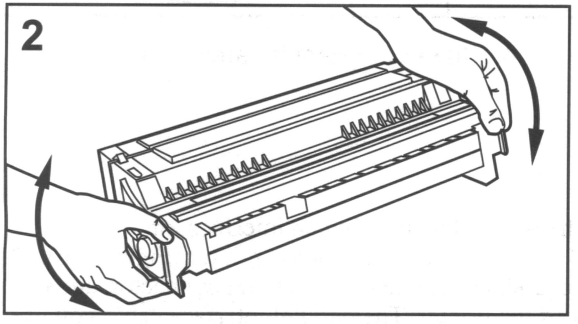
- Room temperature 59°F to 89°F (15°C to 32°C).
- Relative humidity 10% to 80% with no condensation.
- A stable environment—no abrupt temperature or humidity changes.
- No exposure to direct sunlight, chemicals, or vibration.

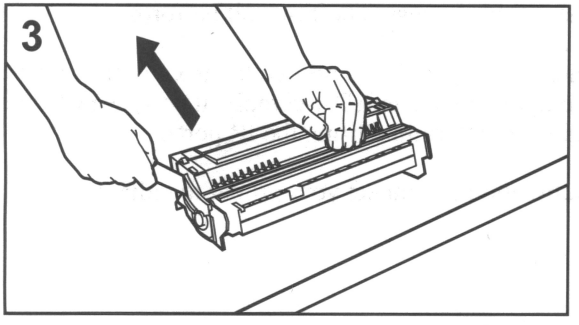
Safety Precautions

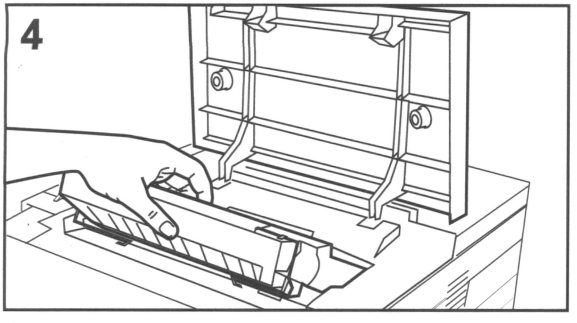
- Do not use where water might get into or on the printer.
- Do not touch any exposed electrical contacts or gears on the printer.
- Do not push objects of any kind into the printer through cabinet vents.

For more specific information about the printer's environmental requirements, see Appendix B, "Environmental Specifications."









To Install the Toner Cartridge

1 Remove the toner cartridge from its packaging.

2 Shake the toner cartridge gently back and forth several times to distribute the toner.

Caution

Because light damages the cartridge's photosensitive drum, do not expose the cartridge to light for more than a few minutes.

3 Grasp the clear tape on the front of the cartridge and pull it firmly in the direction shown to remove the entire strip of 12-15 inch (30-35 cm) sealing tape, and then discard the tape.

4 Press the top cover release button on the side of the printer to open the printer's top cover and insert the toner cartridge into the printer using the arrows on the toner cartridge and printer to guide you.
As you slide the cartridge into place, the shutter wires on each end of the cartridge slide up and rest on the printer cabinet.

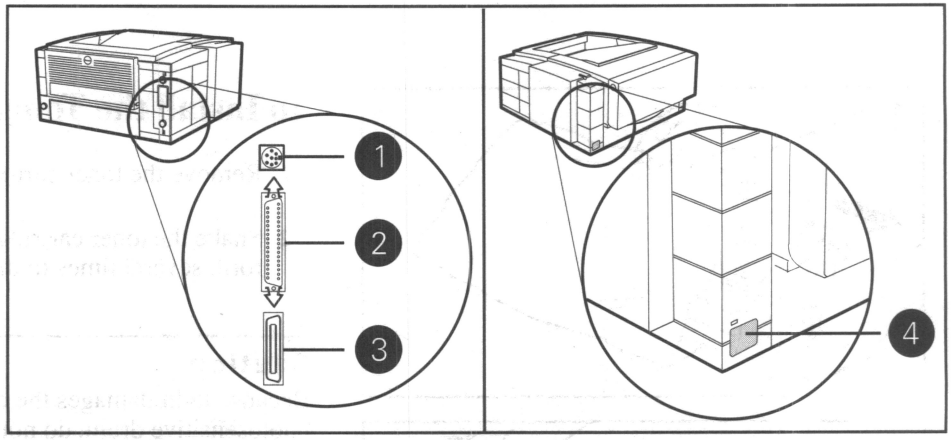
5 Close the top cover.

Caution

If toner gets on your clothes, wipe it off with a dry cloth and wash the clothing in **cold** water. *Hot water sets toner into fabric.*

Connect Your Computer to the Printer

Figure 1-6

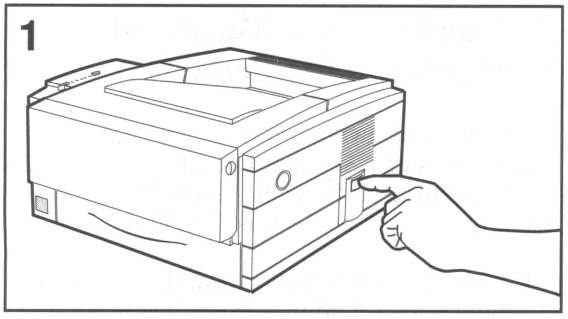


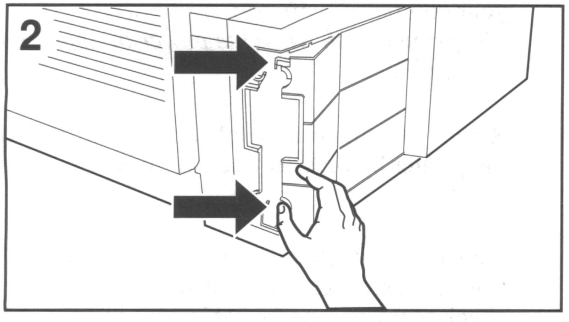
1. LocalTalk Port
2. Large Parallel Port
3. Small Parallel Port
4. IrDA-compliant Infrared Port

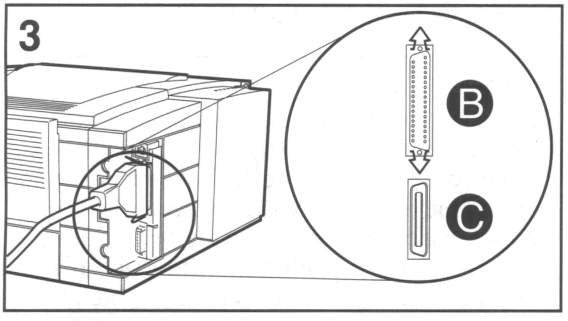
You connect your computer to the printer by attaching an interface, or communications cable to one of the ports at the back of the printer (Figure 1-6). The printer includes one large parallel connector, one small parallel connector, and one LocalTalk connector at the back of the printer. The parallel interface cable you use should be an IEEE-1284 compliant cable to ensure best overall performance.

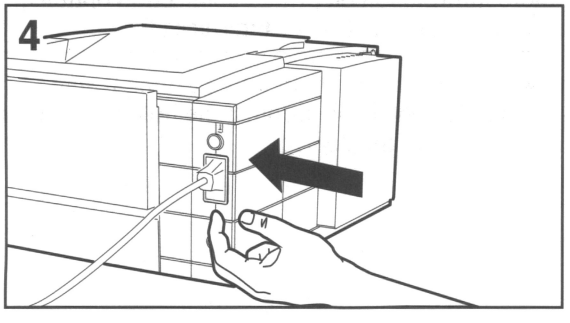
You can also print using the "wireless" infrared (IR) port on the front of the printer. To use this port, you must use equipment with an IrDA-compliant port (see Chapter 2, "Printing," for more information about printing using the IR port).

Follow the instructions in this subsection to connect your printer to either a PC or Macintosh computer.









To Connect Your IBM-Compatible Computer to the Printer

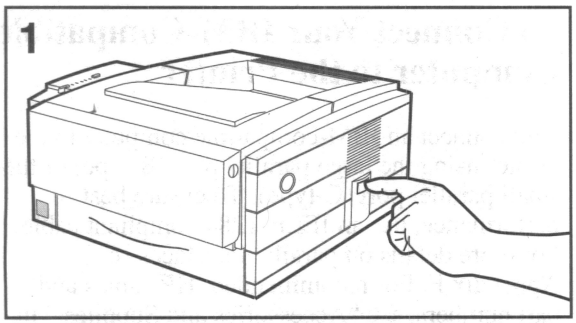
You connect an IBM-compatible computer to the printer using the large parallel port (B-type) or the small parallel port (C-type). To ensure best performance, use an IEEE-1284 compliant cable. For more details on parallel interfaces see Appendix E. For recommended HP cables and part numbers, see "Accessories and Supplies," in Chapter 5.

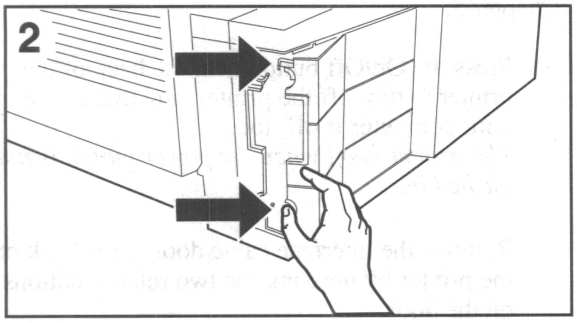
1 Press the On/Off button near the back of the printer to turn off the printer, and make sure your computer is off, too.
The printer is off when the power button is ***not*** *pushed in.*

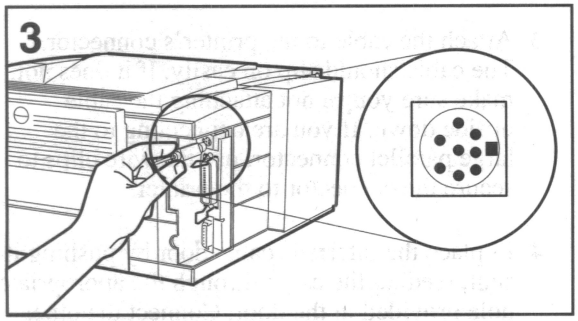
2 Remove the interface cable door at the back of the printer by pressing the two release buttons on the door.

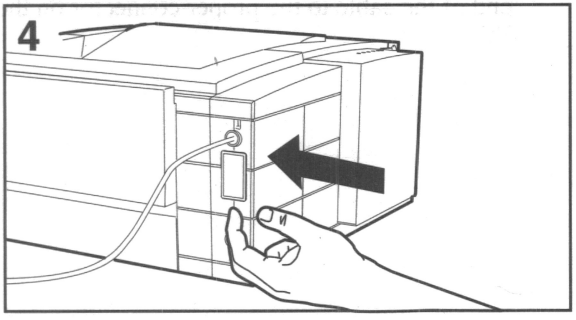
3 Attach the cable to the printer's connector. The cable should slip on easily. If it does not, make sure you're not attaching the cable upside down. If you are connecting to the large parallel connector, use the wire clips to secure the connector to the printer.

4 Replace the interface cable door by pushing it shut, feeding the cable through the appropriate hole provided in the door. Connect the other end of the cable to the proper connector on the PC.









To Connect Your Macintosh Computer to the Printer

You can connect your printer to your Macintosh computer using a Serial or LocalTalk printer cable. For recommended HP cables and part numbers, see "Accessories and Supplies" in Chapter 5.

1 Press the On/Off button near the back of the printer to turn off the printer, and make sure your computer is off, too.
The printer is off when the power button is ***not*** *pushed in.*

2 Remove the interface cable door at the back of the printer by pressing the two release buttons on the door.

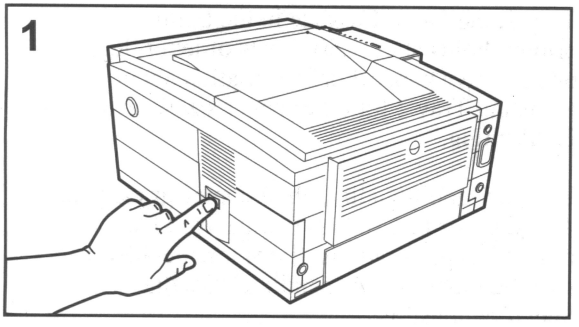
3 Attach the cable to the printer's connector. The cable should slip on easily. If it does not, check to make sure the cable connector is oriented to match the illustration.

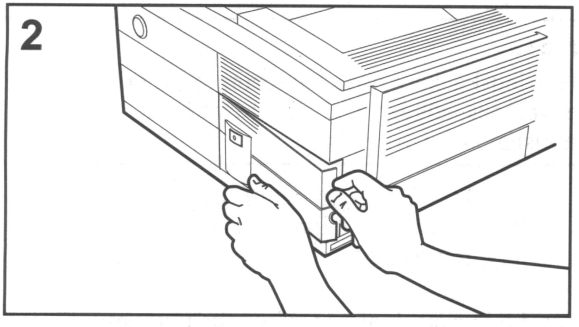
Note

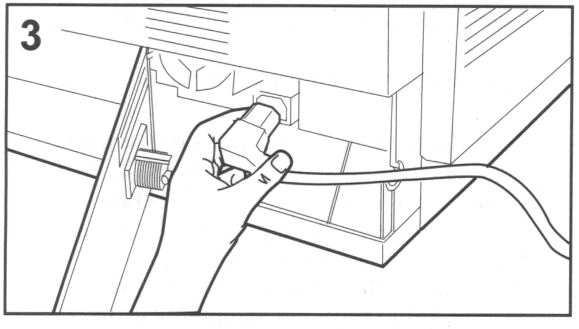
To connect to a LocalTalk network, insert the connector box cable into the printer, then insert one end of the connector cable into the connector box and the other end of the connector box cable into the last connector box on the network. If the connector box is not self-terminating, insert a terminating resistor into the connector box. For more information on printer connection options, see Appendix E, "Printer Interfaces."

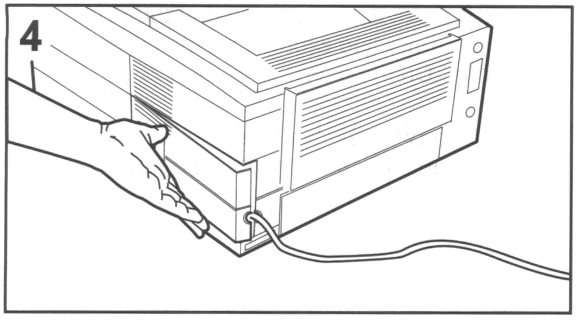
4 Replace the cable door by pushing it shut, feeding the cable through the hole provided at the top of the door.

To Attach the Power Cable









1 Make sure the On/Off button is *off*.
The printer is off when the power button is ***not*** *pushed in.*

2 Open the power cable door at the back of the printer by swinging it out.
The door stays attached to the printer.

3 Connect the power cable securely to the printer.

4 Close the power cable door, feeding the power cable through the hole in the door.

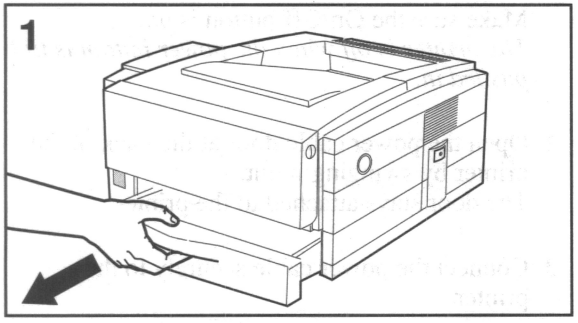
Note

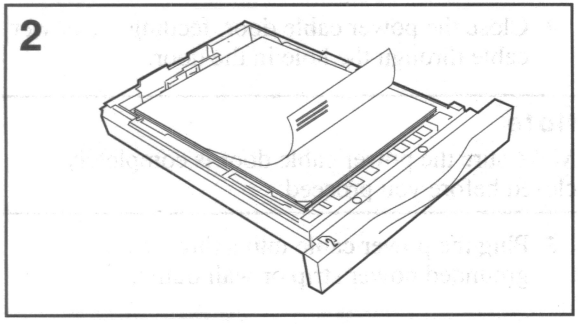
Make sure the power cable door is completely closed before you proceed.

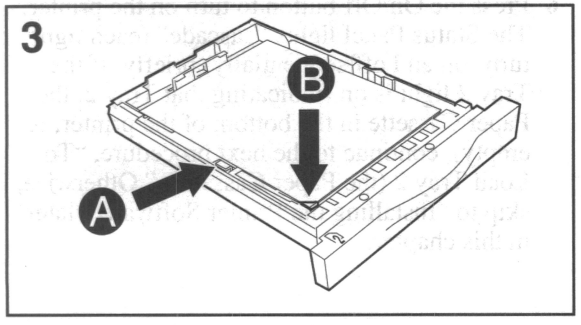
5 Plug the power cable into a three-wire grounded power strip or wall outlet.

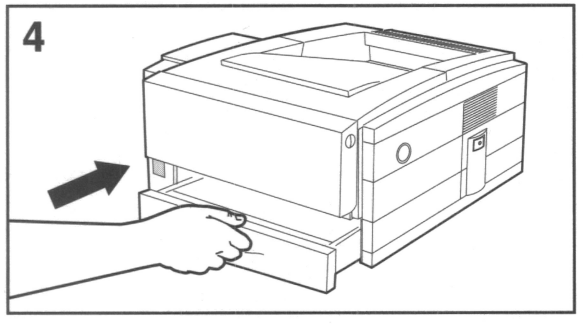
6 Press the On/Off button to turn on the printer. The Status Panel lights "cascade" (each light turns on and off sequentially) briefly. If the Tray 2 light is on (indicating that Tray 2, the Paper Cassette in the bottom of the printer, is empty), continue to the next procedure, "To Load Tray 2 (the Paper Cassette)." Otherwise, skip to "Installing the Printer Software," later in this chapter.

To Load Tray 2 (the Paper Cassette)









Tray 2, the Paper Cassette in the bottom of the printer, holds about 250 sheets of letter, legal, A4, or executive paper. For information about adjusting Tray 2 for other paper sizes, see Chapter 2, "Printing."

Use only good-quality, photocopier-grade paper. Avoid paper that is torn, damp, wrinkled, or curled or that has perforations. (For more detailed paper specifications, see Appendix C "Media Specifications.")

Note

Hewlett-Packard does not recommend printing envelopes, adhesive labels, or overhead transparencies from Tray 2.

1 Pull Tray 2 straight out of the printer. If there are any shipping retainers left in the tray, remove them.

2 Slide a stack of paper into the tray until the paper is in solid contact with the rear of the tray. Load letterhead print-side down with the top of the paper toward the front of the tray.

3 Press down on all four corners of the paper stack to ensure that the paper rests flat in the cassette and fits under the front metal holder and below the stack height arrows on the length spacer at the back of the tray. Press on the clip lever in the side of the cassette (a) to raise the metal holder (b). Then gently shake the cassette so that the paper settles firmly and evenly into the corner under the clip. Do not overfill the cassette.

4 Set the tray on the table or desk and slide the tray completely back into the printer.

Installing the Printer Software

Your HP LaserJet 5P printer comes with the software you need to use your printer in the Windows 3.1 and 3.11 and DOS environments with HP's standard PCL printer language.

The HP LaserJet 5MP printer comes with the software you need to use your printer in the Windows 3.1 and 3.11 and Macintosh environments with the Adobe PostScript Level 2 language.

Note

Please review the "HP Software Product License" in Chapter 5.

Note

At the time this manual was written, Windows 95 had not been released. If you are using Windows 95 and the labels on the Windows printing software disks (included with your printer) do not refer to Windows 95, or there is no other Windows 95 documentation included with your printer, use an HP LaserJet printer driver included with Windows 95 (such as a driver for the HP LaserJet 4 Plus). Also see, "Additional Printer Driver Support" later in this chapter.

Follow the appropriate procedure in this section to install your printer software. Also see Chapter 3 "Understanding Printer Software" and Appendix F "Software Procedures" for more detailed information.

- **Windows PCL**: If you use Windows 3.1 and 3.11 software applications, install all of the HP LaserJet 5P Printing System for Windows 3.1 and 3.11 for PCL. If you do not use Windows applications, you do not need to install the HP LaserJet 5P Printing System for Windows.
- **DOS**: If you are using WordPerfect (version 5.1, 5.1+, or 6.0) for DOS or Lotus 1-2-3 (versions 2.3, 2.4, 3.1, or 3.4) for DOS, install the HP LaserJet 5P DOS Utilities and DOS Printer Drivers (HP provides a printer driver from these software application vendors).
- **Macintosh**: If you are using a Macintosh computer, you will need to install the Printer Software for Macintosh.
- **Windows PostScript**: If you use Windows 3.1 and 3.11 and you have an HP LaserJet 5MP printer, or have purchased and installed the optional Adobe PostScript Level 2 SIMM for the HP LaserJet 5P printer, you need to install the PostScript Printer Software for Windows 3.1 and 3.11 to take advantage of the Adobe PostScript Level 2 language.

To Install the HP LaserJet 5P Printing System for Windows 3.1 and 3.11 for PCL

The "*HP LaserJet 5P Printing System for Windows 3.1 and 3.11*" for PCL includes the following:

- **HP LaserJet PCL Windows Printer Driver:** Allows your Windows applications to "talk" to your printer.
- **HP LaserJet Status Window:** Reports printer activities on your computer screen, including error messages and on-line help. The Status Window requires a direct parallel port connection (see Appendix E, "Printer Interfaces").
- **HP FontSmart:** A font management utility that allows you to easily select and control fonts you want to use in your Windows applications.

1 Make sure your printer is connected to your computer and that both are turned on.

2 Locate the disk labeled "*HP LaserJet 5P Printing System for Windows 3.1 and 3.11*", and follow the instructions on the disk label. When the installation is complete, you will see the HP LaserJet group on the screen, indicating that you are ready to print from Windows with your new printer. The HP LaserJet PCL Windows Printer Driver can be reached from the **Print** dialog box in any Windows application, which you reach by choosing **Print Setup** from the File menu. If you want to change the default printer driver settings (for example, the paper size), select the **Printers** icon from the Control Panel icon in the Main group within Windows, select the HP LaserJet 5P printer, and then click **Setup**.

To Install the HP LaserJet 5P DOS Utilities and DOS Printer Drivers

The "*HP LaserJet 5P DOS Utilities and DOS Printer Drivers*" software includes:

- **DOS Utilities**: (Requires MS-DOS version 3.1 or later) Provides a Status Monitor and Remote Control Panel. The Status Monitor reports printer conditions and error messages on your computer screen (messages such as "paper jam" or "out of paper" will appear on your computer screen). The Remote Control Panel allows you to view or change printer settings from your computer screen.
- **DOS Printer Drivers**: Allows WordPerfect (versions 5.1, 5.1+, or 6.0) and Lotus 1-2-3 (versions 2.3, 2.4, 3.1 or 3.4) to " talk" to your printer. These drivers are developed and supported by their respective application vendors.

If you don't install the DOS software, see "Configuring the Parallel Ports," in Appendix E, to configure your parallel port.

1 Make sure your printer is connected to your computer and that both are turned on.
2 Locate the disk labeled *"HP LaserJet 5P DOS Utilities and DOS Printer Drivers"* and follow the instructions on the disk label.
3 You will need to select the printer driver from within the application—refer to the readme files on the disk.

Note

You will need to install a DOS printer driver for each software application you will be using. If a printer driver is not available for your application, you can use an older HP LaserJet printer driver (such as a driver for the HP LaserJet 4 Plus). Contact your software vendor on availability of new printer drivers.

To Install Printer Software for Macintosh

The HP LaserJet 5MP "*Printer Software for Macintosh*" includes the following:

- **HP LaserJet Printer Driver:** Allows your Macintosh applications to "talk" to your printer (System 6.07 to 7.5).
- **HP LaserJet 5MP QuickDraw GX Printer Driver:** A PostScript printer driver for Macintosh System 7.5 (or newer) with QuickDraw GX installed.
- **HP LaserJet Utility:** Allows you to view or send printer settings to your printer from your computer screen.

1 Quit all open applications.
2 Insert the disk labeled "*Printer Software for Macintosh*" into the floppy disk drive on your computer.
3 Double click on the Installer icon, and follow the instructions on the screen to complete the installation.
4 To complete your installation, refer to the HP LaserJet 5MP Macintosh Notes manual.

To Install PostScript Printer Software for Windows 3.1 and 3.11

The HP LaserJet 5MP "*PostScript Printer Software for Windows 3.1 and 3.11*" includes the following:

- **Adobe PostScript Level 2 Printer Driver:** Allows your Windows applications to "talk" to your new printer.
- **HP Status Window:** Reports printer activities on your computer screen, including error messages and on-line help. The Status Window requires a direct parallel port connection (see Appendix E, "Printer Interfaces").
- **HP FontSmart:** A font management utility that allows you to easily select and control fonts you want to use in your Windows applications.

1 Make sure your printer is connected to your computer and that both are turned on.

2 Locate the disk labeled "*PostScript Printer Software for Windows 3.1 and 3.11*", and follow the instructions on the disk label.

When the installation is complete, you will see the HP LaserJet group on the screen, indicating that you are ready to print from Windows with your new printer. The Adobe PostScript Level 2 Windows Driver can be reached from the **Print** dialog box in any Windows application, which you reach by choosing **Print Setup** from the File menu. If you want to change the default printer driver settings (for example, the paper size), select the **Printers** icon from the Control Panel icon in the Main group within Windows, select the 5MP printer, and then click **Setup**

Additional Printer Driver Support

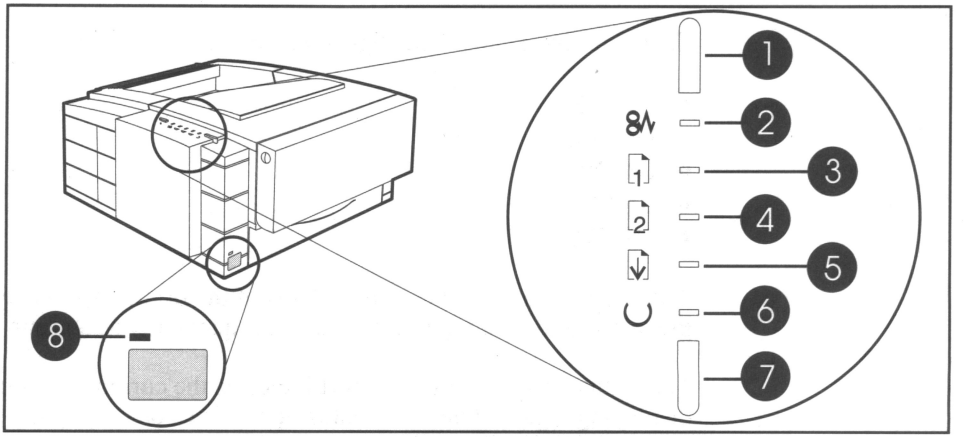
In certain countries you can order additional printer software (e.g. OS/2 for PCL, OS/2 for PostScript) from HP. To inquire what additional printer software is available in your country, see Chapter 5 "Worldwide HP Sales and Service Offices" and call HP First Fax. If HP First Fax is not available in your country, contact your software vendor or the listed HP Sales Office for more information.

If a printer driver is not available for your application, you can use an older HP LaserJet printer driver (such as a driver for the HP LaserJet 4 Plus) until a newer printer driver may become available; however, you may not be able to access the advanced features of your new printer. Contact your software vendor on availability of new printer drivers.

Understanding the Status Panel

This HP LaserJet printer has been designed to be controlled mainly by software. However, some simple functions are also available from the status panel. You also receive status information about the operation of the IrDA-compatible infrared (IR) port from the status light just above the port (for more information, see "To Print Using the Infrared Port," in Chapter 2, "Printing").

Figure 1-7



1. RESET button
2. ERROR status light
3. TRAY 1 status light
4. TRAY 2 status light
5. DATA status light
6. READY status light
7. GO button
8. IR port status light

The Status Panel consists of two buttons you use to complete certain tasks and five status lights that indicate the status of the printer (see Figure 1-7). **Also refer to your Quick Reference Card, included with the printer.**

The GO and RESET Buttons

The printer has two buttons: GO and RESET.

Pressing the GO button:

- Tells the printer to resume printing.
- Prints a demo page. The printer must be in Ready Mode (the green Ready light on steady).
- Prints a self-test page when pressed simultaneously with the RESET button. The printer must be in Ready Mode (the green Ready light on steady).

Pressing the RESET button:

- Clears incomplete print jobs from the printer's memory.
- Clears errors.
- Removes all temporary fonts and macros.
- Returns all printer settings to the default values that you selected.

The Status Lights

There are five Status Panel lights on the printer:

- ERROR
- TRAY 1
- TRAY 2
- DATA
- READY

These lights indicate the current status of the printer by displaying an amber or a green hue and flashing individually or sequentially as a group (cascading).

The status light above the IR port indicates the current status of the IR port by displaying a green hue. This status light comes on only when the IR port is being used—the Status Panel lights operate the same for the IR port as they do for any other port on the printer.

ERROR (amber)

Indicates an error condition, such as a paper jam, missing toner cartridge, or the printer's top cover is open.

TRAY 1 (amber)

Tray 1 (the MP tray) is empty. Add paper to Tray 1. When the Tray 1 light is flashing, the printer is waiting for paper to be manually fed into Tray 1. Once you have inserted the paper, you must press the GO button to feed the paper.

TRAY 2 (amber)

Tray 2 (the Paper Cassette) is empty. Add paper to Tray 2.

DATA (green)

When the Data light is on, the printer is printing. When the Ready light and the Data light are both on, the printer still has unprinted data in its memory. Either press GO to print the remaining data, or press RESET to clear the data from the printer's memory.

READY (green)

The printer is in Ready Mode when the Ready light is on. If the light is flashing, the printer is currently receiving data or in the process of printing.

IR Port Status Light (green)

If this light is on, it indicates that an infrared (IR) connection has been established.

Printer Modes

Normally, only the Ready light is on. For a complete description of all possible Status Panel light patterns, see Chapter 4, "Troubleshooting and Maintenance."

Ready Mode

The printer is ready to receive data and print. Only the Ready light is on. Pressing the GO button prints the demo page and pressing the GO and RESET buttons simultaneously prints the self-test page.

Data in Printer Mode

The printer has received data. The Data and Ready lights are on. Pressing the GO button prints the data in the printer.

Processing Mode

The printer is printing. The Data light is on, and the Ready light flashes.

Warm-up/Self-test Mode

The Status Panel lights cascade (turn on and off sequentially) as the printer warms up.

Tray 1 (MP Tray)/Tray 2 (Paper Cassette) Empty

If the Tray 1 light is on, Tray 1 (the MP tray) is empty. If the Tray 2 light is on, Tray 2 (the Paper Cassette) is empty. Add paper to the appropriate tray.

Manual Feed Mode

Normally, when you send a manual feed print job to the printer, the printer automatically pulls paper from Tray 1. If the Tray 1 light is flashing, the printer is waiting for paper to be manually fed into Tray 1. Then, once you have inserted the paper, you must press the GO button to feed the paper.

Paper Jam/Door Open/No Toner Cartridge

When only the Error light is on, an error condition has occurred, such as a paper jam, missing toner cartridge, or the printer's top cover is open.

Data Error

If the Error light is on *and* the Tray 1, Tray 2, *or* the Data light is on, an error condition has occurred. You must press the GO button to continue. Some of the data already sent to the printer may not print. For more information about error conditions, see Chapter 4, "Troubleshooting and Maintenance."

Printing

Using the Paper Trays

The printer has two paper trays: Tray 1 is a fold-down, MultiPurpose (MP) tray you use for printing many sizes and types of media, and Tray 2 is the Paper Cassette you use for printing standard letter, legal, A4, and executive paper.

The printer also has two output trays: the Top Output Tray receives pages face down, and the Rear Output Tray, which when opened, receives pages face up. You use the Rear Output Tray when printing on custom media, such as envelopes, adhesive labels, or card stock to prevent the media from becoming curled or wrinkled.

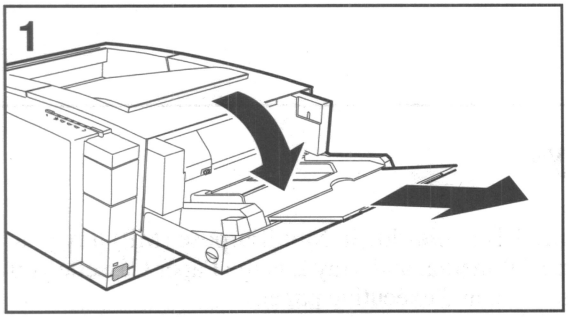
The printer is set up at the factory to automatically select paper first from Tray 1. When Tray 1 is empty, the printer automatically selects paper from Tray 2. You can change the paper tray selection for a specific print job. Make your selection through your software's printer setup screen.

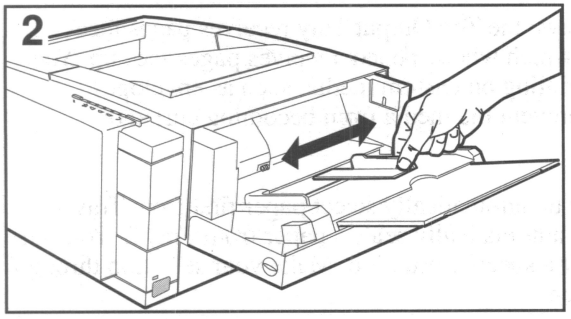
You can print on many sizes and weights of paper, as well as envelopes, post cards, note cards, transparencies, and adhesive labels. To achieve the best possible print quality and avoid jams or misfeeds, use only high-quality print media that is designed for use in copiers or laser printers. (Many recycled papers meet these requirements.) In general:

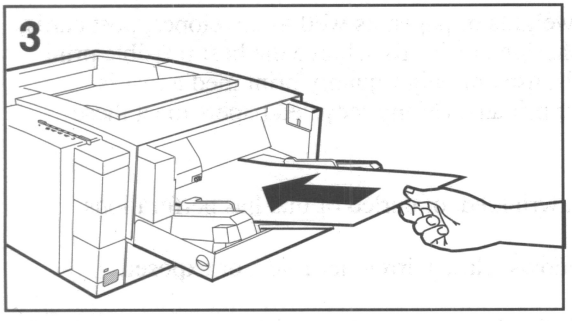
- Avoid paper that is torn, damp, wrinkled, or curled or that has perforations across the page.
- Avoid envelopes that have windows, clasps, irregular folds, or exposed adhesives.
- Avoid transparencies and labels that have exposed adhesive or that are made of materials that cannot withstand the heat of the printer's fuser mechanism (392°F or 200°C) for 0.1 second.

For complete paper and other media specifications, see Appendix C, "Media Specifications."

Printing from Tray 1 (the MP Tray)







Tray 1, or the MP tray, holds from 1 to 100 sheets of paper and a wide range of other media. When printing from Tray 1, you can use either the Top Output Tray or the Rear Output Tray. For most custom media, however, use the Rear Output Tray to provide a straight-through paper path to prevent curling and wrinkling of the media.

You use Tray 1 to print the following:

- All supported paper sizes, from 3 inches by 5 inches (76 mm x 127 mm) to legal paper.
- Transparencies (Use Top Output Tray).
- Adhesive labels.
- Envelopes.
- Heavy paper or stock.
- Post cards.

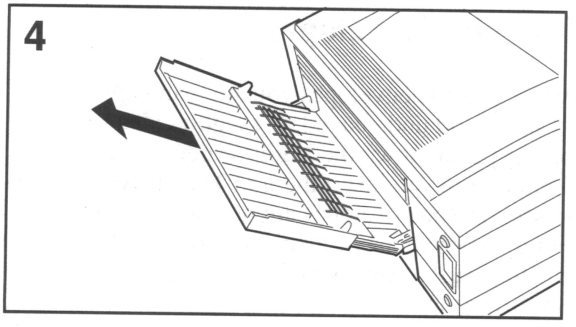
1 Open Tray 1 by grasping the door on the front of the printer and gently pulling the tray away from the printer until it stops, and then pull out the tray extensions if needed for the paper or media you are using.
The flat extension supports envelopes, letter, and A4 paper. The wire extension supports legal paper.

2 Slide the paper width guide to fit the width of your paper or media.

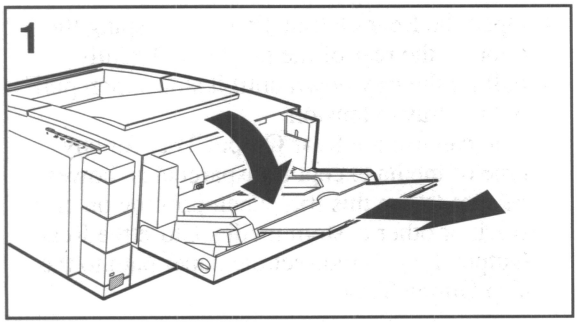
3 Slide the paper into the tray as far as it will go, until the leading edges rest lightly against the printer.
The height of the paper stack should not exceed the limit mark on the left paper width guides.

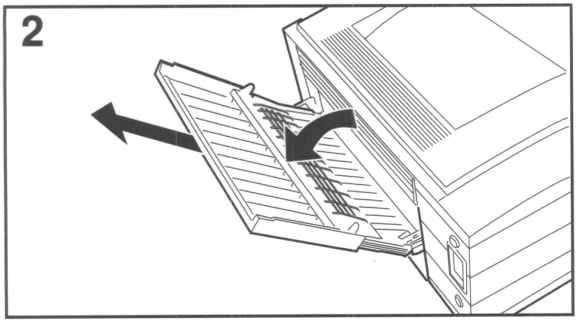
Note

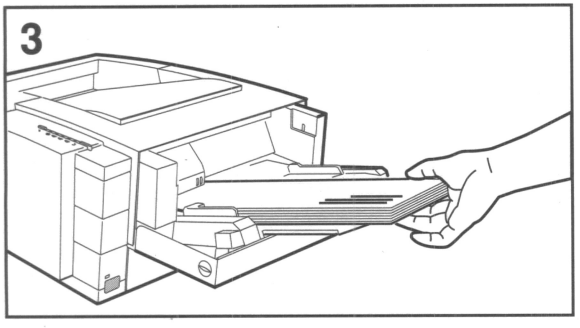
Never add paper or other media to Tray 1 while the printer is printing. If you do, the media might jam inside the printer.



4 Open the Rear Output Tray by grasping the door on the rear of the printer and gently pulling the tray down until it stops, then pull out the tray extension.
You can use the Rear Output Tray for any type of media except transparencies; however, be sure to use this tray when printing on card stock or other custom media. Close the Rear Output Tray to redirect the paper path to the Top Output Tray.







To Print Envelopes

Make sure the envelopes you are using are regular in shape and undamaged. It's a good idea to run a pen or pencil down the leading edge to flatten them before you insert them in Tray 1. Also, check to see that the envelopes are not stuck together. For a complete list of media specifications for envelopes, see Appendix C, "Media Specifications."

Caution

Never use envelopes with clasps, snaps, windows, coated linings, self-stick adhesives (peel and seal), or other synthetic materials. These items can severely damage your printer.

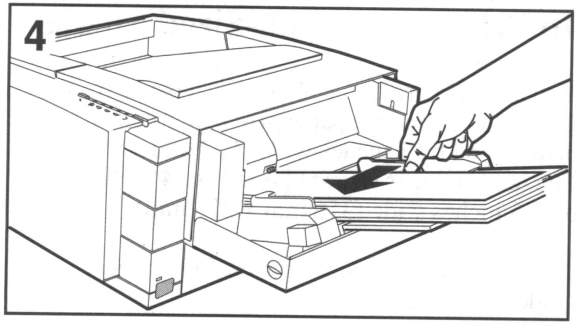
1 Open Tray 1 by grasping the door on the front of the printer and gently pulling the tray away from the printer until it stops, and then pull out the tray extension.

2 Open the Rear Output Tray by grasping the door on the rear of the printer and gently pulling the tray down until it stops, then pull out the tray extension.

3 Place the envelopes in Tray 1 *print-side up* (stamp-side up and to the left) so that the left edges align with the tray's left guide, and gently insert them into the tray until you feel some resistance.
The height of the envelope stack should not exceed the limit mark on the inside of the fixed paper width guide.

Note

Never add paper or other media to Tray 1 while the printer is printing. If you do, the media might jam inside the printer.



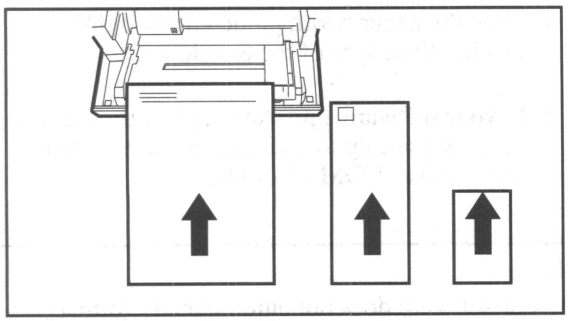
4 Slide the paper width guide until it lightly touches the edges of the envelopes.

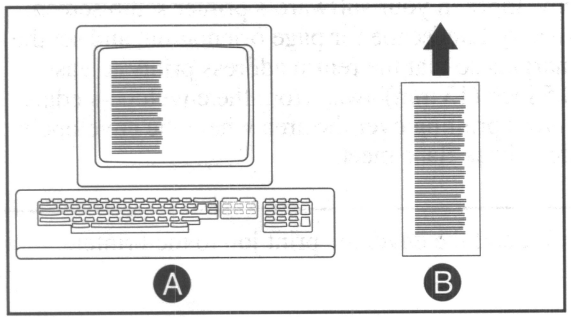
5 In your software's printer setup screen, set the page size setting to the appropriate envelope size, such as COM 10 or DL.

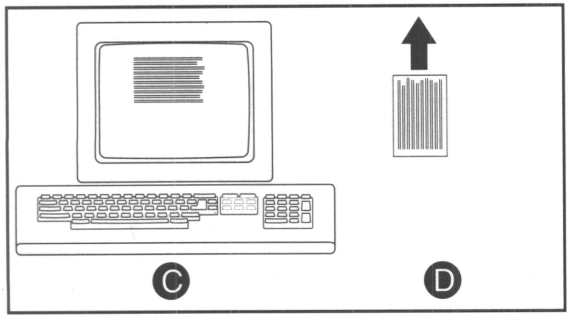
Note

If your software does not automatically format envelopes in your software's printer setup screen, specify Landscape for page orientation, and set the margins so that the return address prints at least 0.5 inch (13 mm) away from the envelope's edge. Avoid printing over the area where the envelope's three back flaps meet.

6 Send the envelope print job to the printer.







To Print on Custom-Sized Media

You can also print on custom-sized paper from Tray 1. The smallest paper size supported is 5 inches long by 3 inches wide (127 mm x 76 mm). The largest paper size supported is 14 inches long by 8.5 inches wide (356 mm x 216 mm).

To print on custom-sized paper, follow these guidelines:

- The length of your media must be at least 5 inches (127 mm). This allows the rollers inside the printer to "grab" the paper and pull it completely through the printer.
- If your software does not have a "custom media" paper size selection, adjust the margins on a normal page so that the text area is the correct size and shape for printing on your custom-sized paper.
- You may need to change the orientation (Landscape or Portrait) to accommodate the length of the media you are using.

To set margins for portrait orientation:

View A shows how text formatted for a narrow piece of paper looks on the screen. Notice the large margin on the right side of the screen.

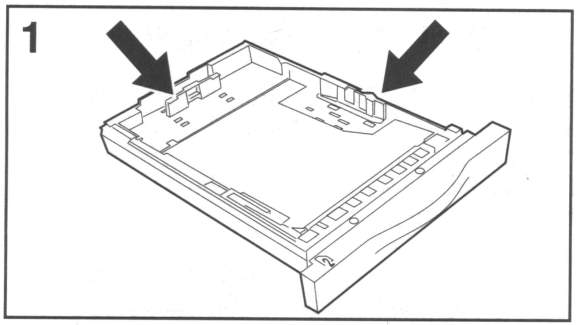
View B shows the printed page. The arrow shows the direction the paper is fed into the printer.

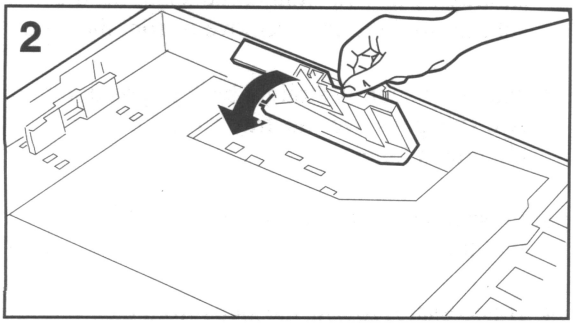
To set margins for an index card in landscape orientation:

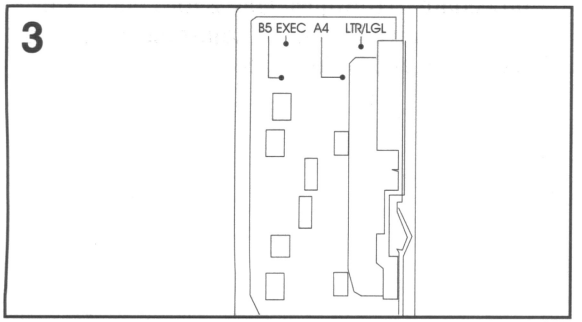
View C shows text that is formatted for an index card in landscape orientation. The large left margin positions the text next to the right edge of the screen.

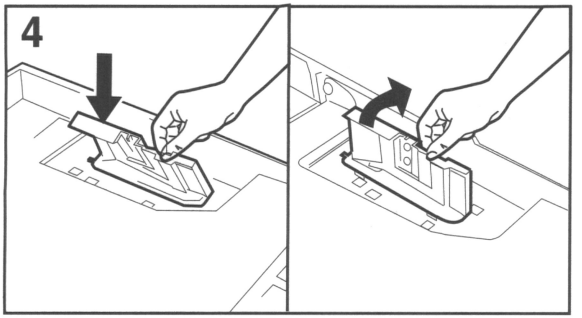
View D shows the printed index card. The arrow shows the direction the paper is fed into the printer.

Adjusting Tray 2 for Different Paper Sizes









To Adjust Tray 2 for Letter, A4, and Executive Paper

Tray 2 holds several sizes of paper. To adjust Tray 2 for letter, A4, or executive paper, follow these steps:

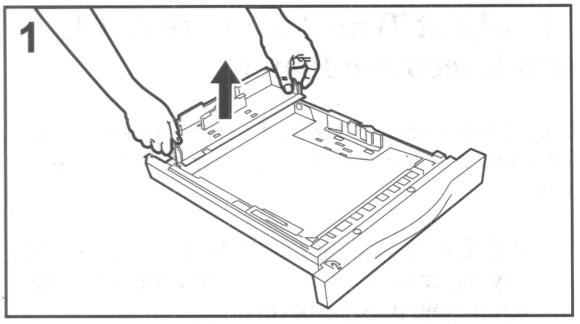
1. Pull Tray 2 straight out of the printer, remove any paper in the tray, and then locate the two removable plastic spacers.
   The spacer on the side of the tray is for the paper width, and the spacer at the back of the tray is for the paper length.

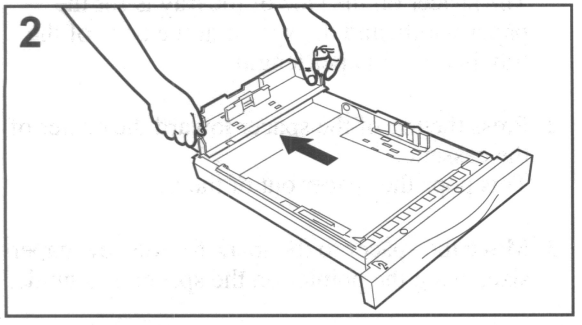
2. Press the top of the spacer toward the center of the cassette.
   This pops the spacer out of the tray.

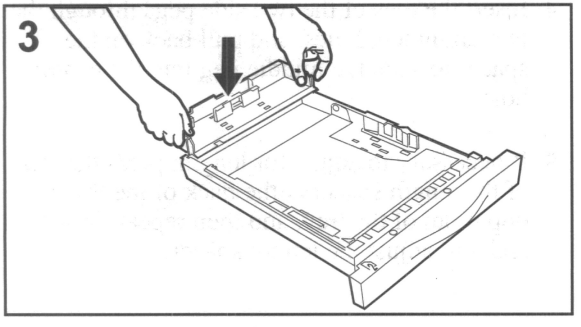
3. Move the spacer to the mark for the new paper size, using the pointer on the spacer as a guide.

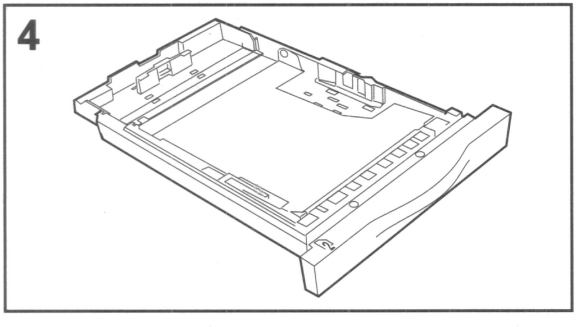
4. Insert the toes of the two side pegs through the two alignment holes, and pull back on the spacer to snap the middle peg into the center hole.

5. If necessary to adjust for length, press the top of the length spacer at the back of the tray to pop it out of the tray, and then repeat steps 3 and 4 to adjust the length spacer.









To Adjust Tray 2 for Legal Paper

You can print legal paper through either Tray 1 or Tray 2. To adjust Tray 1 for legal paper, see "Printing from Tray 1 (the MP Tray)," earlier in this chapter. To adjust Tray 2 to hold legal paper, follow these steps:

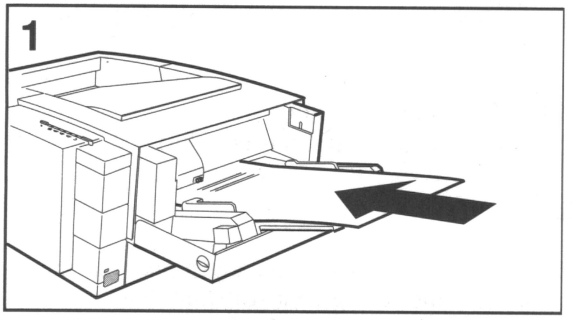
1 Pull Tray 2 straight out of the printer, remove any paper in the tray, and then grasp the subtray by its two front corners and lift the subtray straight up to remove it from the tray.

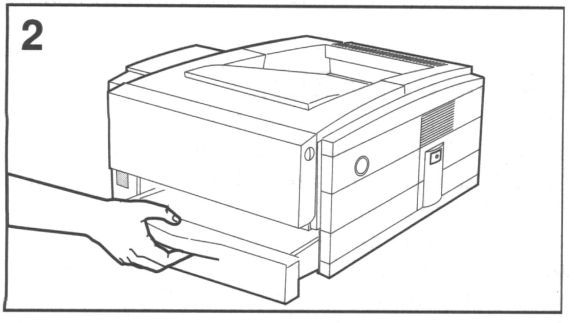
2 Move the subtray straight back to position the two side pegs over the tray's legal paper alignment holes.

3 Press down on the subtray to slide the pegs into the holes.

4 If necessary, follow the steps from the procedure "To Adjust Tray 2 for Letter, A4, and Executive Paper," to adjust the position of the length and width spacers.

To Print Using Tray 1 and Tray 2





You can print using Tray 1 and Tray 2 for the same print job. This way, you can print using more than one type of paper or media. For example, when you print on letterhead or on a form, the printer can select your preprinted paper from Tray 1 and plain paper from Tray 2.

1 Place a single sheet of letterhead in Tray 1 *face-up*.

2 Fill Tray 2 with plain or second-sheet paper.

3 Send the print job to the printer.
The printer automatically selects the sheet of letterhead from Tray 1, then prints the remaining pages from Tray 2.

Note

You can print multiple copies of a job that requires two types of paper or media at once by placing several sheets of letterhead in Tray 1; however, your software must allow you to specify a paper tray selection on individual pages. Not all software can do this.

Fine-Tuning Print Quality

You can fine-tune the quality of your printer's output by adjusting the following settings:

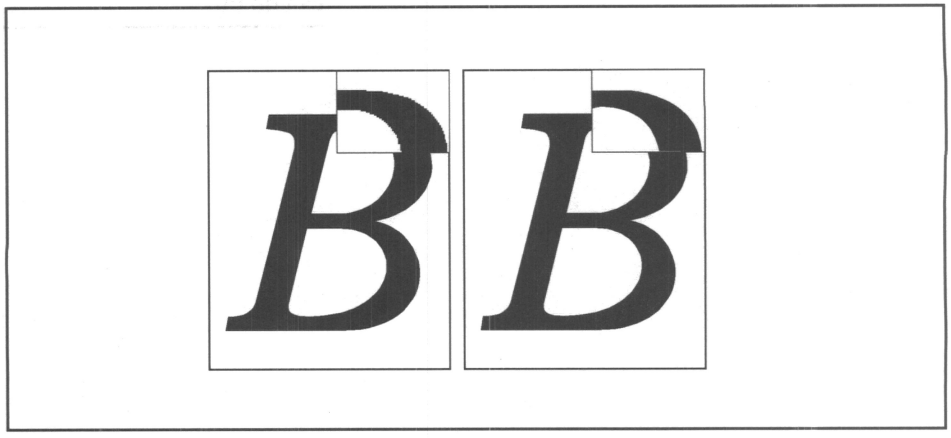
- REt—Off, Light, Medium, or Dark (default is Medium).
- Resolution—600 dpi (dots per inch) or 300 dpi (default is 600 dpi).
- Density—1–5 (default is 3).
- EconoMode—On or Off (default is Off).

These settings all work together, so it is likely that when you adjust one, you may want to adjust another. You adjust these settings using your software. For procedures on how to change these settings, see Appendix F, "Software Procedures."

Enhancing the Resolution (or Using REt)

Your printer prints at true 600 x 600 dpi enhanced with Resolution Enhancement technology (REt) and microfine toner. REt adjusts the size and placement of each dot on the page to produce smooth angles and curves. Combined with microfine toner, this sharpens the appearance of text and graphics. Figure 2-1 shows two magnified images: the image on the left illustrates REt set to Off; the image on the right illustrates the REt set to Medium, which is the default setting. The printer also offers 300-dpi printing with REt for compatibility with applications and documents designed for earlier HP printers.

Figure 2-1



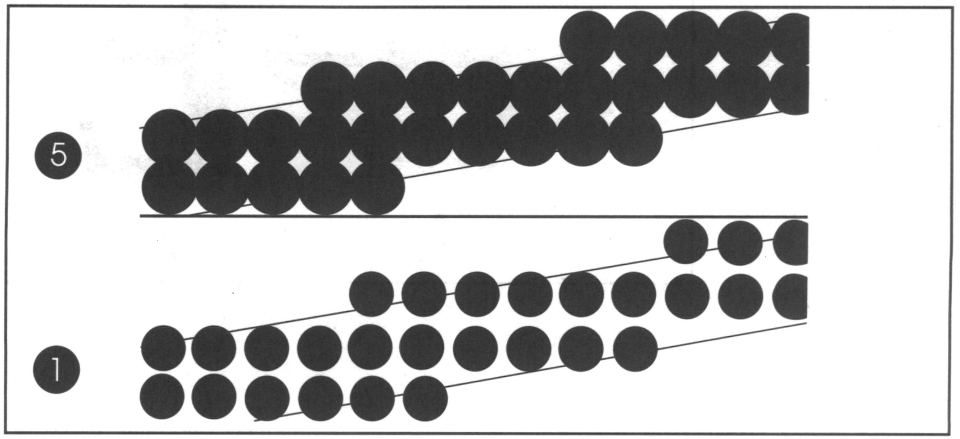
Printing at 600 or 300 dpi Resolution

Your printer offers greatly-improved print quality at true 600 x 600 dpi (dots per inch); however, if your needs require printing at a lower resolution, you can also print at 300 x 300 dpi. To take best advantage of 600-dpi printing, use the software designed for your printer.

Adjusting Print Density

Print density is a measure of the darkness of print on the page. Print density settings range from 1 to 5, with 1 producing the lightest print and 5 the heaviest (see Figure 2-2). The default for this setting is 3.

Figure 2-2



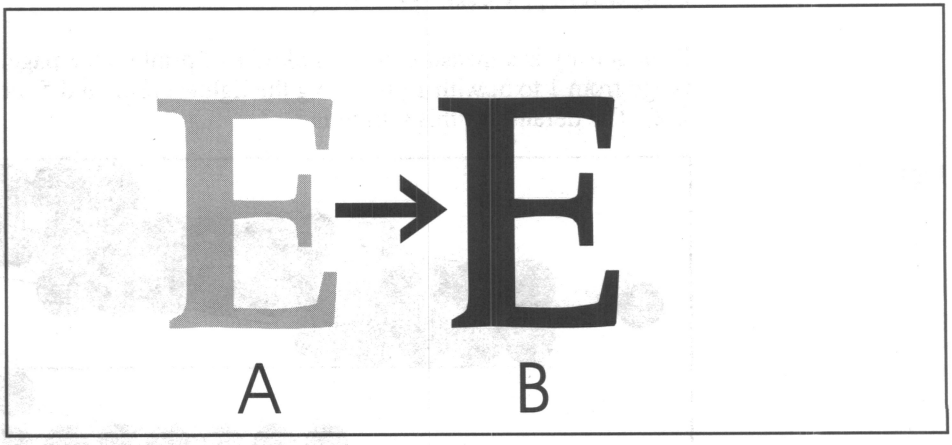
Note

The higher the print density setting, the more toner the printer uses. To save on toner in the toner cartridge, choose lighter print density settings.

Using EconoMode

To save on toner in the toner cartridge, use EconoMode when printing drafts of your documents. EconoMode lowers printing costs by reducing the amount of toner used on the printed page by as much as 50%. When EconoMode is set to On, the printed image is lighter but still readable, like "A" in Figure 2-3. When EconoMode is set to Off, the image appears darker, like "B" in Figure 2-3. The default for EconoMode is Off.

Figure 2-3



To Stop a Print Job

You stop a print job from your software application. Stopping a print job may be necessary if, for example, you have sent the wrong job to print or you selected the wrong specifications for the print job, such as the paper orientation or number of copies.

To stop a print job:

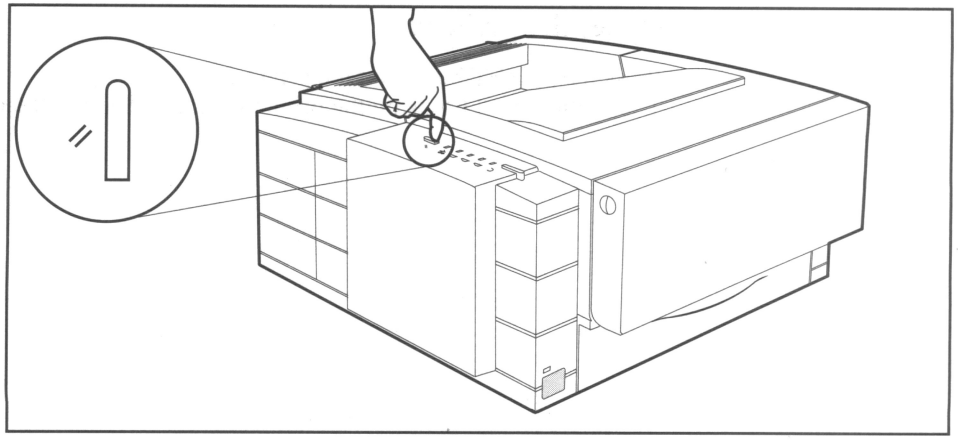
1 Cancel the print job through your software.
For specific instructions on stopping a print job, see the instructions that came with your software application.

2 Press the RESET button on the printer (see Figure 2-4) to clear the printer's memory.

Note

Press the RESET button only if you are having problems printing or to clear printed pages from the printer's memory when you stop a print job.

Figure 2-4



The Status Panel lights on the printer cascade, then the Ready light comes on. A few more pages of your print job may print.

When you stop a print job, the printer prints the pages it received before you stopped the print job (usually a few pages) and then cancels the remainder of the job. If several jobs have been sent to the printer, they may be waiting in a print queue (Windows Print Manager, for example). The job you stopped will stop printing, then the next job in the queue will begin printing. If the queue is empty (no more print jobs in the queue), printing resumes the next time you print a job.

To Reset the Printer

You reset the printer by pressing the RESET button on the printer (see Figure 2-4). Reset the printer *only* if you are having a printer problem as described in Chapter 4, "Troubleshooting and Maintenance," or if you have stopped a print job (see "To Stop a Print Job," earlier in this chapter).

When you reset the printer, the following occurs:

- Incomplete print jobs are cleared from the printer's memory.
- Communication errors are cleared.
- All temporary fonts and macros are removed.
- All printer settings are returned to the default values that you selected.

Note

Press the RESET button only if you are having problems printing or to clear unprinted pages from the printer's memory when you stop a print job.

To reset the printer:

- Press the RESET button on the printer.
  The Status Panel lights on the printer cascade, then the Ready light comes on.

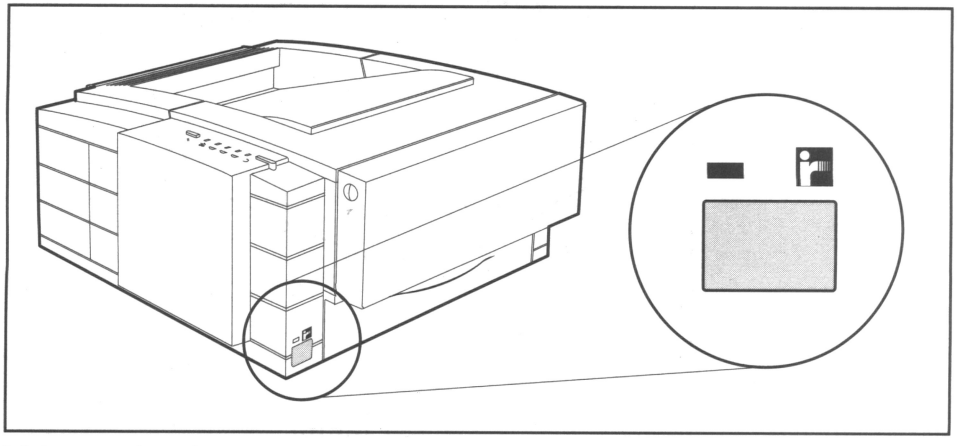
To Print Using the Infrared Port

The infrared (IR) port on your HP LaserJet 5P or 5MP printer is located on the lower front left corner of the printer (Figure 2-5). This port is compliant with the specifications determined by the Infared Data Association (IrDA). Just above the port is a status light that indicates when the port is activated. To use the IR port, you need to use a portable device that also includes an IrDA-compliant IR port and be within the range of operation (see Figure 2-6).

The IR port is compatible with a wide variety of IrDA-compliant portable devices; however, the method for printing will vary depending on the type of device and the operating system in use. Refer to the instruction manual for your portable equipment for specific instructions on printing from that device.

The IR port works by transmitting data similarly to a serial port, however, without a cable and operates at speeds of up to 115 k bits per second. When the IR connection is established, the status light comes on. If the connection is broken or when the print job is complete, the status light goes off.

Figure 2-5



1 Make sure the printer is in Ready Mode (the Ready light is on).

2 Align your laptop computer (or other portable equipment) that is equipped with an IrDA-compliant IR port within 2–3 feet (1 m) of the IR port on the printer and at an angle of ±15 degrees to ensure printing (Figure 2-6).

3 Send the print job. The status light above the IR port turns on (printing a complex document or using a software print spooler on your PC may delay the time it takes for the IR status light to turn on). If the status light does not turn on, realign the port on your portable equipment with the port on the printer, resend the print job and stay within the range of operation during printing.

4 If you have to move the device, for example, to add paper, make sure you stay within the range of operation to maintain the connection. If the connection is interrupted before your print job is complete, the IR port status light will turn off.

You have from 3 to 40 seconds to correct the interruption and continue the job. In this case, the IR port status light turns back on.

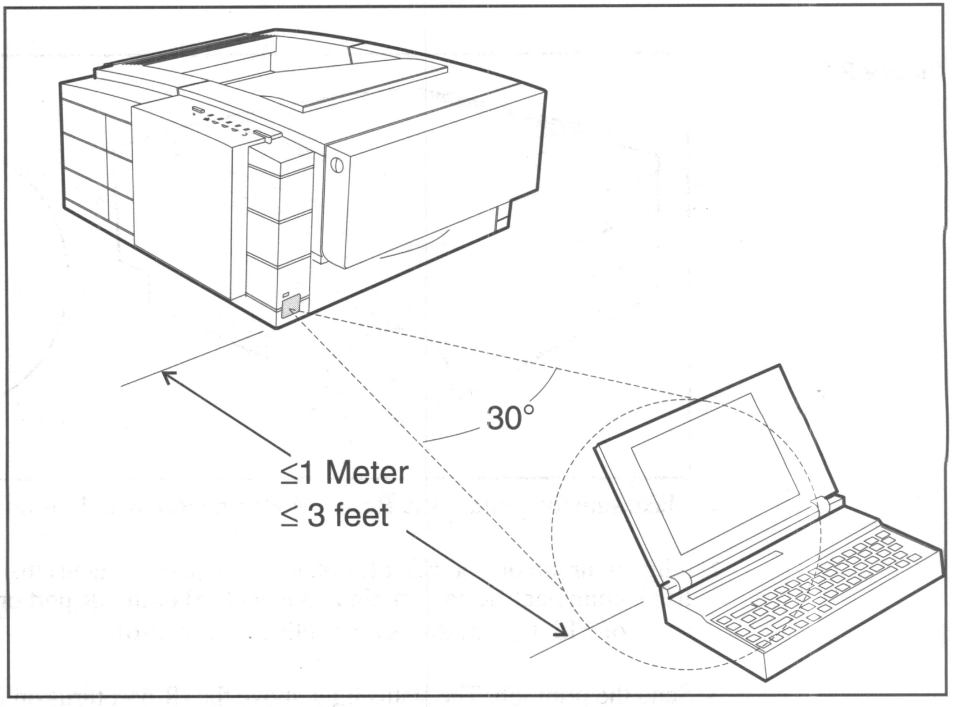
5 The connection can be permanently broken (interrupted for more than 3 to 40 seconds) if the "sending" IR port is moved out of the range of operation or if anything passes between the two ports to block the transmission, such as a hand or piece of paper, or even direct sunlight. In this case, the job needs to be reprinted.

If you still have problems printing, make sure you are using an IrDA-compliant device and proper software and have selected the proper port for printing. Also see Chapter 4, "Troubleshooting and Maintenance," for help with other printing problems.

Note

The IrDA standard for infrared communications represents an emerging technology. Older non-IrDA-compliant portable devices may not be compatible with your HP LaserJet 5P / 5MP printer. If you continue to have problems printing using the IR port, contact the manufacturer or dealer where you purchased your portable device to verify compatibility with the IrDA standard.

Figure 2-6



3

Understanding Printer Software

Overview

Your HP LaserJet 5P printer comes with software you need to take full advantage of the printer's features in the Windows and DOS environments using HP's enhanced PCL5 printer language.

The HP LaserJet 5MP printer comes with software you need to take full advantage of the printer's features in the Macintosh or Windows environments using Adobe's PostScript Level 2 printer language.

This chapter describes the following:

- Software for the HP LaserJet 5P printer.
- Special features and tasks using your HP LaserJet 5P printer.
- Software for the HP LaserJet 5MP printer.
- Special features and tasks using your HP LaserJet 5MP.
- Managing printer memory.

Note

Installing printer software is an important part of setting up your printer. To install the software for your printer, see "Setting Up Your Printer" in Chapter 1, "Getting Started". See Appendix F "Software Procedures" for a list of features accessible through the software.

Software for the HP LaserJet 5P Printer

The HP LaserJet 5P printer comes with Windows and DOS software that you need to use your printer with Hewlett-Packard's PCL printer language.

Software for Windows 3.1 and 3.11

The HP LaserJet 5P printer ships with the *"HP LaserJet 5P Printing System for Microsoft Windows 3.1 and 3.11"* software, which includes the HP LaserJet PCL Windows Printer Driver, HP FontSmart, and the HP Status Window.

HP LaserJet PCL Windows Printer Driver

The printer driver enables your Windows applications to "talk" with your printer and use all of your printer's features. Once you install the HP LaserJet PCL Windows Printer Driver, you access it from the **Print** dialog box in any Windows application by choosing **Print Setup** from the File menu or from the Windows Control Panel group.

HP FontSmart

HP FontSmart includes font management tools and files which allow you to display on your computer screen the 45 typefaces included in your printer. This approximation of screen display to printed result is known as WYSIWYG, short for "what you see is what you get." HP FontSmart also includes an additional 65 scalable TrueType fonts on disk for Windows 3.1 and 3.11.

HP Status Window

The Status Window reports printer conditions and error messages on your computer screen, such as "Paper Out." The Status Window displays messages on your screen only if your computer is directly connected to the printer's parallel port (see Appendix E "Printer Interfaces").

Software for DOS

Your HP LaserJet 5P printer comes with PCL printer drivers for WordPerfect (versions 5.1, 5.1+, and 6.0) and Lotus 1-2-3 (versions 2.3, 2.4, 3.1, and 3.4) for DOS and installation instructions for these popular applications. These drivers are developed and supported by their respective application vendors.

Note

If your DOS application is not listed here, contact your software manufacturer or distributor. If a printer driver is not available for that application, you can use an older HP LaserJet printer driver (such as a driver for the HP LaserJet 4 Plus).

In addition, your printer comes with DOS utilities, including the Status Monitor and Remote Control Panel (RCP). These utilities are available if you print for DOS and require a direct connection to the printer's parallel port (see Appendix E "Printer Interfaces").

Status Monitor

The Status Monitor displays a message on your computer's screen each time the printer's status changes. You can change Status Monitor settings from the Status Monitor screens. You may also turn off the Status Monitor if you do not want printer status messages displayed while you work.

Remote Control Panel

The Remote Control Panel, or RCP, enables you to change printer settings if your DOS software application does not support the printer feature you want to use. Printer settings you specify from your DOS software application may override settings you specify from the RCP, so if you can change a setting in your software application, do so.

Special Features and Tasks Using Your HP LaserJet 5P Printer

This section describes the following special features and tasks (also see Appendix F "Software Procedures"):

- Printing a self-test page and demo page.
- Printing and checking a list of PCL typefaces.
- Changing the default symbol set.

Printing a Self-Test Page and Demo Page

You can print a self-test page to get information about your printer's current settings, options, and print quality. You can use this page to troubleshoot print quality problems and to view current print density and Resolution Enhancement settings so you can adjust them.

You can also print the demo, or demonstration, page to quickly check that the printer is operational.

To print a self-test page:

- Simultaneously press the GO and RESET buttons on the printer's Status Panel while the printer is in Ready Mode.
- Or using the HP LaserJet PCL Windows Printer Driver, under "Device Option", select the "Configure Printer" button and choose "PCL Self-Test Page".
- Or using the Remote Control Panel (in DOS), under "Options" select "Print Test Page" and choose "PCL Self-Test Page".

Figure 3-2 shows a sample self-test page. Numbers in the sample self-test page match numbers in the Key to Figure 3-2, which follows the illustration. The appearance of the self-test page varies depending on the options currently installed in your printer.

To print a demo page:

- Press the GO button on the printer's Status Panel while the printer is in Ready Mode.

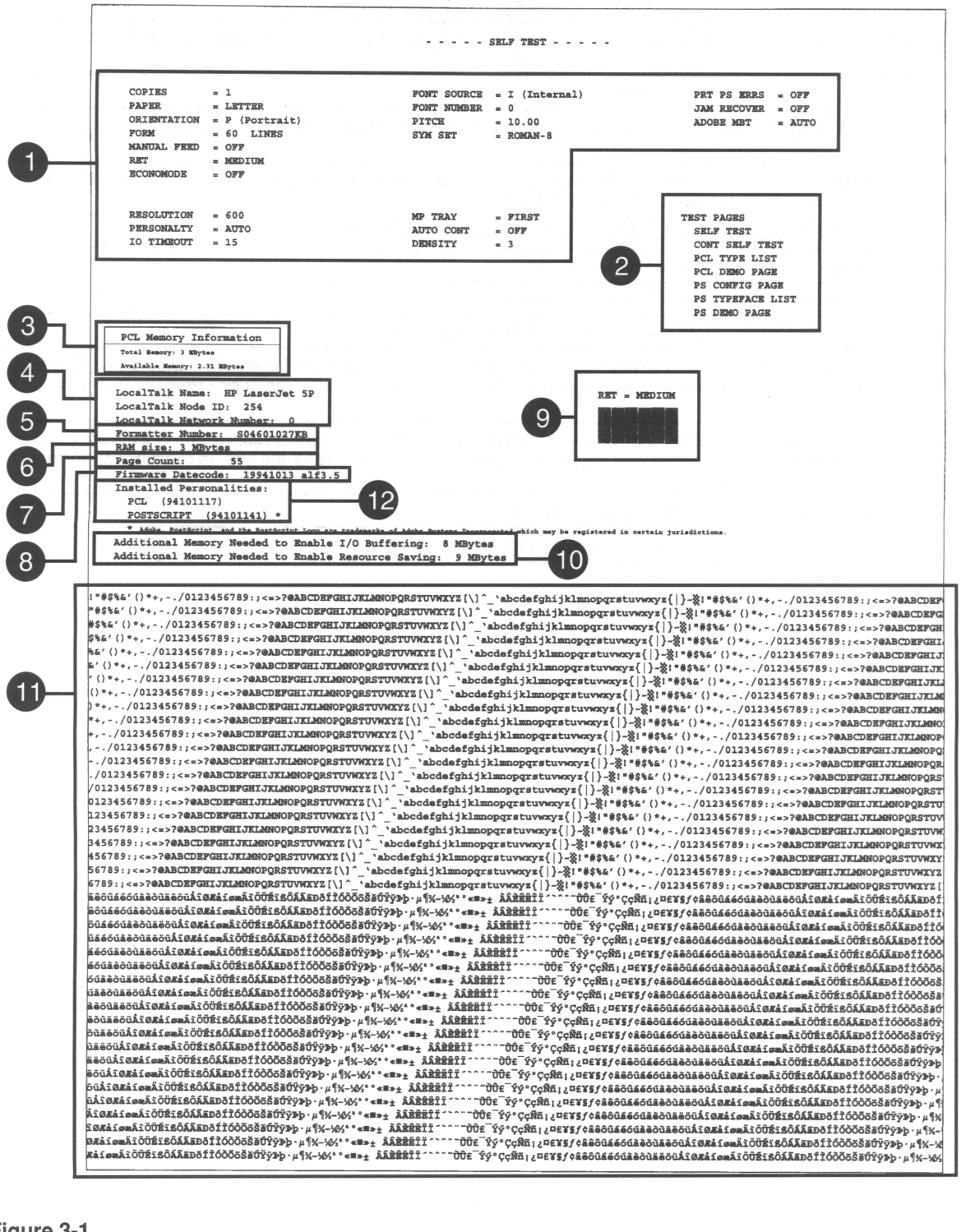

- - - - - SELF TEST - - - - -
COPIES = 1
PAPER = LETTER
ORIENTATION = P (Portrait)
FORM = 60 LINES
MANUAL FEED = OFF
RET = MEDIUM
ECONOMODE = OFF
FONT SOURCE = I (Internal)
FONT NUMBER = 0
PITCH = 10.00
SYM SET = ROMAN-8
PRT PS ERRS = OFF
JAM RECOVER = OFF
ADOBE MBT = AUTO
RESOLUTION = 600
PERSONALTY = AUTO
IO TIMEOUT = 15
MP TRAY = FIRST
AUTO CONT = OFF
DENSITY = 3
TEST PAGES
SELF TEST
CONT SELF TEST
PCL TYPE LIST
PCL DEMO PAGE
PS CONFIG PAGE
PS TYPEFACE LIST
PS DEMO PAGE
PCL Memory Information
Total Memory: 3 MBytes
Available Memory: 2.31 MBytes
LocalTalk Name: HP LaserJet 5P
LocalTalk Node ID: 254
LocalTalk Network Number: 0
Formatter Number: S04601027KB
RAM size: 3 MBytes
Page Count: 55
Firmware Datecode: 19941013 alf3.5
Installed Personalities:
PCL (94101117)
POSTSCRIPT (94101141) *
* Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions.
Additional Memory Needed to Enable I/O Buffering: 8 MBytes
Additional Memory Needed to Enable Resource Saving: 9 MBytes
RET = MEDIUM
1
2
3
4
5
6
7
8
9
10
11
12

Figure 3-1

Item	Key to Figure 3-2. Self-Test Page
1	**Printer Options:** Lists printer options you can adjust using your printer software (see Appendix F, "Software Procedures").
2	**Test Pages:** Shows test pages you can print from your printer.
3	**PCL Memory Information:** Shows the total amount of installed memory. Also indicates the amount of available memory for PCL applications.
4	**LocalTalk Name/Node ID/Network Number:** If your printer is connected to a LocalTalk network, shows the network name, node ID for your printer, and the network number.
5	**Formatter Number:** Shows serial number of internal electronics board.
6	**RAM size:** Shows total installed printer memory.
7	**Page Count:** Shows number of pages the printer has printed.
8	**Firmware Datecode:** Eight-digit date (YYYYMMDD) of formatter firmware.
9	**Resolution Enhancement:** When resolution is set to 600 dpi, the Resolution Enhancement technology (REt) block appears here. The REt block illustrates current resolution enhancement (see "Fine-Tuning Print Quality," in Chapter 2, "Printing").
10	**I/O Buffering and Resource Saving:** Information about the current configuration appears here. If the printer does not have enough memory installed to enable I/O Buffering or Resource Saving, the amount of additional memory needed appears here.
11	**Print Pattern:** Illustrates print density and quality.
12	**Installed Personalities:** Shows which printer languages (personalities) are installed.

Printing and Checking a List of PCL Typefaces

Your HP LaserJet 5P / 5MP printer comes internally with 45 scalable typefaces and one bitmapped Line Printer font. You can find out which PCL typefaces are currently installed in your printer by printing a PCL typeface list.

The typeface list printout shows the standard internal PCL typefaces and fonts, optional SIMM-based fonts, and permanent soft fonts. Permanent soft fonts are downloaded fonts that stay resident in the printer until you download other fonts to replace them, or until you turn the printer off.

Figure 3-1 shows the first page of a sample PCL typeface list. Numbers in the sample typeface list match numbers in the Key to Figure 3-1, which follows the illustration.

To print the PCL typeface list:

- Using the HP LaserJet PCL Windows Printer Driver, under "Device Option", select the "Configure Printer" button and choose "PCL Typeface List".
- Using the Remote Control Panel (in DOS), under "Options" select "Print Test Page" and choose "PCL Typeface List".

Item	Key to Figure 3-1. PCL Typeface List
1	**Typeface:** The name of the typeface.
2	**Pitch/Point:** Indicates the specified pitch or point size of the font. "Scale" indicates a scalable typeface.
3	**Escape Sequence:** This PCL programming command is used to select the designated font.
4	**Font #:** The number assigned to internal or downloaded soft fonts. (Do not confuse the font *number* with the soft font *ID*, described next.) The letter preceding the font number shows the source of the font—I is *Internal* and S is *Permanent* soft font, and M is *SIMM* (slot number follows).
5	**Font ID:** The number *you assign* to soft fonts when you download them through your software.

HEWLETT PACKARD

HP LaserJet 5P Printer
PCL Typeface List

1 2 3 4 5

Internal Scalable Typefaces and Bitmapped Fonts

Typeface	Pitch/Point	Escape Sequence	Font #	Font ID
Courier	Scale	<esc>(□<esc>(s0p▒h0s0b4099T	I 000	
CG Times	Scale	<esc>(□<esc>(s1p■v0s0b4101T	I 001	
CG Times Bold	Scale	<esc>(□<esc>(s1p■v0s3b4101T	I 002	
CG Times Italic	Scale	<esc>(□<esc>(s1p■v1s0b4101T	I 003	
CG Times Bold Italic	Scale	<esc>(□<esc>(s1p■v1s3b4101T	I 004	
CG Omega	Scale	<esc>(□<esc>(s1p■v0s0b4113T	I 005	
CG Omega Bold	Scale	<esc>(□<esc>(s1p■v0s3b4113T	I 006	
CG Omega Italic	Scale	<esc>(□<esc>(s1p■v1s0b4113T	I 007	
CG Omega Bold Italic	Scale	<esc>(□<esc>(s1p■v1s3b4113T	I 008	
Coronet	Scale	<esc>(□<esc>(s1p■v1s0b4116T	I 009	
Clarendon Condensed	Scale	<esc>(□<esc>(s1p■v4s3b4140T	I 010	
Univers Medium	Scale	<esc>(□<esc>(s1p■v0s0b4148T	I 011	
Univers Bold	Scale	<esc>(□<esc>(s1p■v0s3b4148T	I 012	
Univers Medium Italic	Scale	<esc>(□<esc>(s1p■v1s0b4148T	I 013	
Univers Bold Italic	Scale	<esc>(□<esc>(s1p■v1s3b4148T	I 014	
Univers Medium Condensed	Scale	<esc>(□<esc>(s1p■v4s0b4148T	I 015	
Univers Bold Condensed	Scale	<esc>(□<esc>(s1p■v4s3b4148T	I 016	
Univers Medium Condensed Italic	Scale	<esc>(□<esc>(s1p■v5s0b4148T	I 017	
Univers Bold Condensed Italic	Scale	<esc>(□<esc>(s1p■v5s3b4148T	I 018	
Antique Olive	Scale	<esc>(□<esc>(s1p■v0s0b4168T	I 019	
Antique Olive Bold	Scale	<esc>(□<esc>(s1p■v0s3b4168T	I 020	
Antique Olive Italic	Scale	<esc>(□<esc>(s1p■v1s0b4168T	I 021	
Garamond Antiqua	Scale	<esc>(□<esc>(s1p■v0s0b4197T	I 022	
Garamond Halbfett	Scale	<esc>(□<esc>(s1p■v0s3b4197T	I 023	

▒Pitch: .10 - 576 □Symbol set ■Point size: .25 - 999.75
See your HP LaserJet 5P Printer User's Manual for more information.

Figure 3-2

Changing the Default Symbol Set

The default symbol set in your printer is "Roman-8". Using DOS, there may be situations where you need to change this setting to another symbol set to get access to different characters or symbols (if your software or driver is not able to select the appropriate symbol set). Also refer to Appendix A for available symbol sets.

To change the default symbol set:

- Using the Remote Control Panel (in DOS), under "Type" select the required "Symbol Set".

Software for the HP LaserJet 5MP Printer

The HP LaserJet 5MP printer comes with Macintosh and Windows software that you need to use your printer with Adobe's PostScript printer language. Should you want to use HP's enhanced PCL 5 printer language, you will need the HP LaserJet 5P printer software. If the HP LaserJet 5P printer software is not included with your HP LaserJet 5MP printer, in the U.S. contact (303) 339-7009, or your local Customer Support Center (see Chapter 5).

For information about using your Macintosh with the printer, also see the HP LaserJet 5MP Printer Macintosh Notes, included with your HP LaserJet 5MP printer or the optional Adobe PostScript SIMM.

For DOS applications, you must select a PostScript language printer driver from within your software application. If your software does not offer a PostScript language printer driver selection, it may not support PostScript printing. For more information on DOS PostScript printer driver installation and selection, see your software documentation or contact your software vendor.

Software for the Macintosh

The HP LaserJet 5MP printer comes with the following Macintosh software:

- Adobe PostScript Level 2 printer drivers.
- Bitmapped PostScript screen fonts.
- HP LaserJet Utility.

Adobe PostScript Level 2 Printer Drivers

The HP LaserJet 5MP printer comes with Adobe PostScript Level 2 printer drivers for both QuickDraw and QuickDraw GX printing systems and an auto-installation utility. Once you install the driver, most of your printer's features are available from the **Print Options** dialog box (see the HP LaserJet 5MP Printer Macintosh Notes, included with your printer).

Bitmapped PostScript Screen Fonts

When you install the HP LaserJet 5MP printer driver, bitmapped PostScript screen fonts are automatically installed on your system. These screen fonts match your printer's 35 internal PostScript typefaces, allowing you to see on screen how your printed page will look.

HP LaserJet Utility

The HP LaserJet Utility's illustrated screens make selecting printer features from your Macintosh easier than ever. This utility allows you to control most printer features from your computer screen. You can do the following:

- Name the printer.
- Specify your printer configuration and default settings.
- Download fonts.
- Manage printer security.
- Print the PostScript self-test page, demo page, and typeface list.

Note

To learn how to use the HP LaserJet Utility, see the HP LaserJet 5MP Printer Macintosh Notes, included with your printer.

PostScript Printer Software for Windows 3.1 and 3.11

The HP LaserJet 5MP printer ships with the "*PostScript Printer Software for Windows 3.1 and 3.11*", which includes the Adobe PostScript Level 2 printer driver, HP FontSmart, and the Status Window.

Adobe PostScript Level 2 Printer Driver

The HP LaserJet 5MP printer comes with an Adobe PostScript Level 2 printer driver that allows your applications to "talk" with the printer. The driver also allows you to configure your printer's features and download PostScript fonts to the printer's memory. Once you install this driver, most of your printer's features are available from the **Print Setup** dialog box (accessed from the **File** menu) within your Windows applications.

HP FontSmart

HP FontSmart includes font management tools and files to display on your computer screen the PostScript 35 Type 1 fonts included in your printer. This approximation of screen display to printed result is known as WYSIWYG, short for "what you see is what you get." HP FontSmart also includes an additional 75 scalable TrueType fonts on disk for Windows 3.1 and 3.11.

HP Status Window

The Status Window reports printer conditions and error messages on your computer screen, such as "Paper Out". The Status Window displays messages on your screen only if your computer is directly connected to the printer's parallel port (see Appendix E "Printer Interfaces").

Special Features and Tasks Using your HP LaserJet 5MP Printer

This section describes the following special features and tasks (also see Appendix F "Software Procedures"):

- Printing a configuration and demo page.
- Printing the PostScript typeface list.
- Switching printer languages (personalities).

Note

For more information about PostScript printing with your Macintosh and the HP LaserJet 5MP printer or the HP LaserJet 5P printer with an installed Adobe PostScript Level 2 SIMM, see the HP LaserJet 5MP Printer Macintosh Notes.

Printing a Configuration and Demo Page

The PostScript configuration page is designed to show your printer's settings. Figure 3-3 shows a sample PostScript configuration page. Numbers in the sample configuration page match numbers in the Key to Figure 3-3, which follows the illustration. The appearance of the configuration page varies depending on the options currently installed in your printer.

You can also print the demo, or demonstration, page to quickly check that the printer is operational.

To print a configuration page:

- Simultaneously press the GO and RESET buttons on the printer. The self-test page will print first, then the PostScript configuration page will print.
- Or using the Adobe PostScript Level 2 Printer Driver (in Windows), select the "Advanced" button and choose "PostScript Configuration Page".
- Or using the HP LaserJet Utility for Macintosh, under the "HP Utility Folder" select the "Test Pages" panel and choose "PostScript Configuration Page".

To print a demo page:

- Press the GO button on the printer's Status Panel while the printer is in Ready Mode.

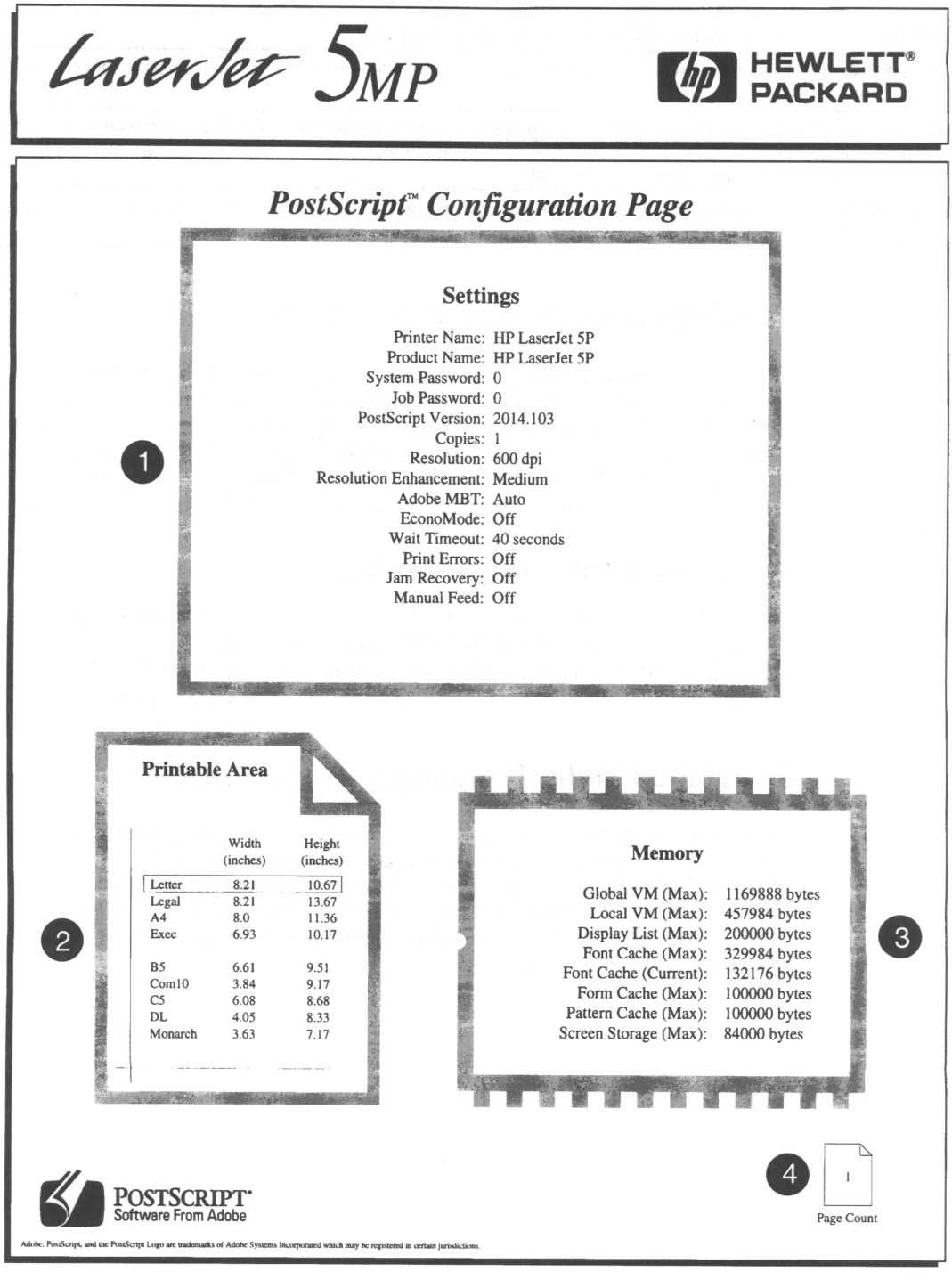

LaserJet 5MP
HEWLETT® PACKARD
PostScript™ Configuration Page
Settings
Printer Name: HP LaserJet 5P
Product Name: HP LaserJet 5P
System Password: 0
Job Password: 0
PostScript Version: 2014.103
Copies: 1
Resolution: 600 dpi
Resolution Enhancement: Medium
Adobe MBT: Auto
EconoMode: Off
Wait Timeout: 40 seconds
Print Errors: Off
Jam Recovery: Off
Manual Feed: Off
1
Printable Area
Width (inches) Height (inches)
Letter 8.21 10.67
Legal 8.21 13.67
A4 8.0 11.36
Exec 6.93 10.17
B5 6.61 9.51
Com10 3.84 9.17
C5 6.08 8.68
DL 4.05 8.33
Monarch 3.63 7.17
2
Memory
Global VM (Max): 1169888 bytes
Local VM (Max): 457984 bytes
Display List (Max): 200000 bytes
Font Cache (Max): 329984 bytes
Font Cache (Current): 132176 bytes
Form Cache (Max): 100000 bytes
Pattern Cache (Max): 100000 bytes
Screen Storage (Max): 84000 bytes
3
POSTSCRIPT Software From Adobe
4
1
Page Count
Adobe, PostScript, and the PostScript Logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions.

Figure 3-3

Item	Key to Figure 3-3. PostScript Configuration Page
1	**Settings:** Current printer default settings and product-specific information.
2	**Printable Area:** Gives the dimensions within the margins of the image area. The current default is shown in the hollow box.
3	**Memory:** The value shows how PostScript uses printer memory. This may be useful for more experienced users, since PostScript Level 2 allows users to configure memory parameters (see the Adobe PostScript Level 2 "Red Book" for specific information about these values).
4	**Page Count:** Shows number of pages that have been printed by the printer in all printer languages. You can use the page count to track printer use.

Printing the PostScript Typeface List

The PostScript typeface list shows samples of the 35 built-in PostScript language typefaces (see Figure 3-4). The list will *not* display any downloaded PostScript typefaces or any internal or downloaded PCL typefaces (because of the complexity of the list, *it may take more than 30 seconds before printing begins).* Keep in mind that the more fonts that are downloaded (some software applications do this automatically), the more printer memory is used, which can slow down printing.

To print the PostScript typeface list:

- Using the Adobe PostScript Level 2 Printer Driver (in Windows), select the "Advanced" button and choose "PostScript Typeface List".
- Using the HP LaserJet Utility for Macintosh, under the "HP Utility Folder" select the "Test Pages" panel and choose "PostScript Typeface List".

Switching Printer Languages (Personalities)

If more than one printer language is installed, by default your printer is set to switch automatically between languages as it receives print jobs. If you have the HP LaserJet 5MP printer, or if you have installed the optional PostScript language SIMM in your HP LaserJet 5P printer, you can send documents to the printer in either Hewlett-Packard's PCL or Adobe's PostScript language without changing any software or printer settings.

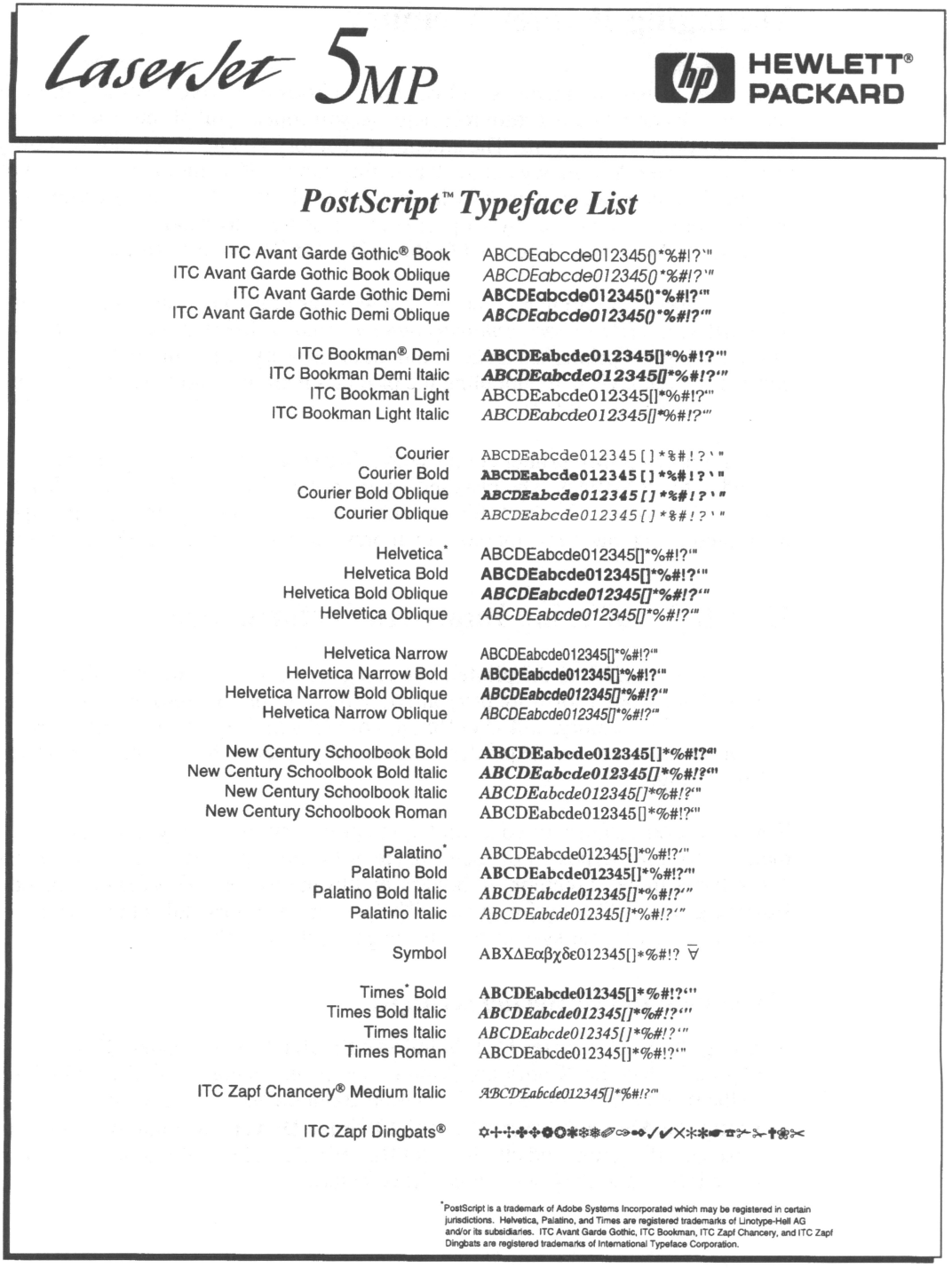

LaserJet 5MP
HEWLETT® PACKARD
PostScript™ Typeface List
ITC Avant Garde Gothic® Book
ITC Avant Garde Gothic Book Oblique
ITC Avant Garde Gothic Demi
ITC Avant Garde Gothic Demi Oblique
ITC Bookman® Demi
ITC Bookman Demi Italic
ITC Bookman Light
ITC Bookman Light Italic
Courier
Courier Bold
Courier Bold Oblique
Courier Oblique
Helvetica*
Helvetica Bold
Helvetica Bold Oblique
Helvetica Oblique
Helvetica Narrow
Helvetica Narrow Bold
Helvetica Narrow Bold Oblique
Helvetica Narrow Oblique
New Century Schoolbook Bold
New Century Schoolbook Bold Italic
New Century Schoolbook Italic
New Century Schoolbook Roman
Palatino*
Palatino Bold
Palatino Bold Italic
Palatino Italic
Symbol
Times* Bold
Times Bold Italic
Times Italic
Times Roman
ITC Zapf Chancery® Medium Italic
ITC Zapf Dingbats®
*PostScript is a trademark of Adobe Systems Incorporated which may be registered in certain jurisdictions. Helvetica, Palatino, and Times are registered trademarks of Linotype-Hell AG and/or its subsidiaries. ITC Avant Garde Gothic, ITC Bookman, ITC Zapf Chancery, and ITC Zapf Dingbats are registered trademarks of International Typeface Corporation.

Figure 3-4

Managing Printer Memory

The printer's memory receives, holds, and processes data from incoming print jobs and manages downloaded resources, such as soft fonts, symbol sets, macros, patterns, forms, and screens. The amount of memory you need depends on how you use your printer. You may want to change the amount of memory allocated if you commonly download an unusually large number of fonts, if you print complex graphics or documents, or if your printer is in a shared environment or you want to use advanced functions (such as I/O Buffering and Resource Saving).

The HP LaserJet 5P printer comes with 2 MBytes of memory and can be expanded to 50 MBytes. *HP Memory Enhancement technology* (MEt) allows most documents to print using the printer's standard amount of memory. MEt automatically compresses data, virtually doubling the printer's memory, allowing you to even print complex pages at 600 dpi.

The HP LaserJet 5MP printer comes with 3 MBytes of memory and can be expanded to 35 MBytes. The installed PostScript SIMM includes *Adobe Memory Booster Technology* (Adobe MBT), which allows most 600-dpi PostScript pages to be printed using much less memory than previous HP LaserJet PostScript printers.

How I/O Buffering Improves Performance

When you send a job to the printer, you can get back to work quicker after you choose **Print** from a software program because your printer automatically reserves a portion of its memory, an I/O buffer, to hold jobs in progress. In most cases, it is to your advantage to let the printer automatically reserve the memory allocated for I/O Buffering.

When you add memory to your printer, the printer automatically reserves more memory for this purpose. For each MByte of memory you add, the printer reserves 100 k Bytes more of memory to hold print jobs in progress. This feature, called I/O Buffering, works like a print spooler. The printer's memory holds the job while it prints, freeing up your system so you can get back to work.

To change I/O Buffering settings:

- **Using the HP LaserJet PCL Windows Printer Driver**, under "Device Option" select the "Configure Printer" button and choose "I/O Buffering". Refer to the on-line help for more information about the use of this feature.
- **Using the Adobe PostScript Level 2 Printer Driver** (in Windows), select the "Advanced" button and choose "I/O Buffering". Refer to the on-line help for more information about the use of this feature.

Resource Saving

When only the PCL personality is installed, the printer uses all available memory to maintain downloaded resources. When two or more personalities are installed, the printer reserves a portion of memory for each personality's resources. Resource Saving enables the printer to keep downloaded resources in memory under most conditions.

When the PostScript option is installed, Resource Saving automatically becomes available when sufficient memory is installed. By default, the printer automatically allocates resources to each printer personality. Most users will not need to customize the printer's Resource Saving configuration, but you *can* change the amount of memory allocated to each printer personality. You do this through the printer software; however, before changing Resource Saving allocation, check the self-test page for your printer to see the memory requirements for this feature.

To change Resource Saving settings:

- **Using the HP LaserJet PCL Windows Printer Driver**, under "Device Option" select the "Configure Printer" button and choose "Resource Saving". Refer to the on-line help for more information about the use of this feature.
- **Using the Adobe PostScript Level 2 Printer Driver (in Windows)**, select the "Advanced" button and choose "Resource Saving". Refer to the on-line help for more information about the use of this feature.

Troubleshooting and Maintenance

Overview

If you have a problem while printing, use the checklists and procedures in this chapter to identify and solve the problem. This chapter includes information on the following:

- Troubleshooting
- Clearing paper jams
- Maintaining the printer
- Calling for help

If for some reason the printer does not print a job, follow these guidelines first. If you're still having a problem, see the tables in the following sections to assist you in solving the problem.

Troubleshooting Checklists

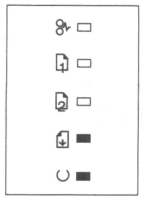
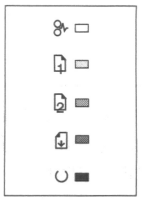
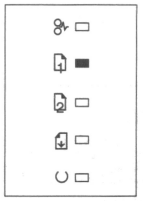
Use the information in the following section to help solve printer problems. For networked printers, check with your network administrator if you suspect a network-related problem. The troubleshooting tables are organized as follows:

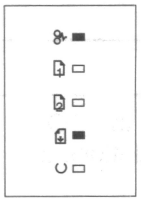
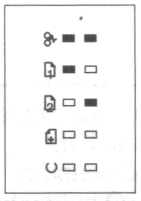
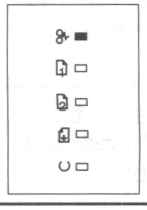
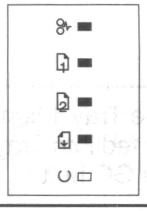
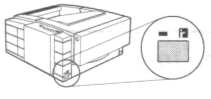
- Status Panel lights
- Data error light patterns
- General operation problems
- Repeated paper jams
- Print quality problems
- PostScript printing

Before consulting the troubleshooting tables, complete the following procedure to help you locate the origin of the problem:

1. Check to see whether or not the printer is in Ready Mode (the Ready light is the only light on the Status Panel that is on). This verifies that the printer is receiving power and is not in Error Mode.
2. Press the GO button to print a demo page. This verifies that the printer can feed paper.
3. Check to see whether or not the demo page is printed correctly and that it fed into the printer properly. This verifies that the printer can print successfully.
4. Print a short document. This verifies that your computer and the printer are successfully connected.

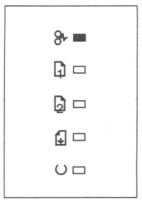
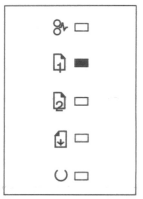
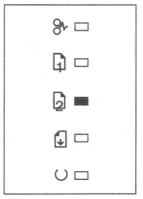
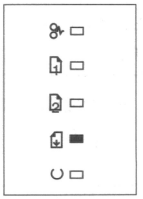
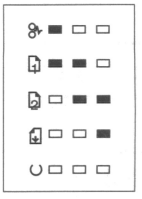
Understanding Status Panel Lights

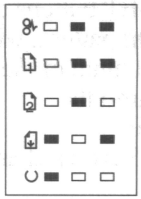
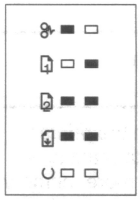
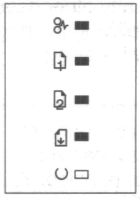
Light Pattern	Description
	The printer is in Ready Mode and is ready to print. Press the GO button to print a demo page. Press the GO and RESET buttons to print a self-test page.
	The printer has received data. If the Ready light is flashing, the printer is processing the data—wait for the next page to be printed. If the Data light and the Ready light are both on for an extended period of time (the Ready light does not begin to flash), press the GO button to print the next page. A document or page may take a long time to print if, for example, the document or page contains complex text or graphics.
	The printer is warming up or resetting after you have pressed the RESET button. The lights on the Status Panel "cascade" (each light turns on and off sequentially) until the printer is ready to print.
	Tray 1 (the MP Tray) is empty. Add paper to the tray. If the Tray 1 light is flashing, the printer is waiting for paper to be manually fed into Tray 1. Once you have inserted the paper, you must press the GO button to feed the paper.
	Tray 2 (the Paper Cassette) is empty. Add paper to the tray.

	A data error has occurred. Press the GO button to continue printing (some data may be lost). For more information, see "Data Error Light Patterns," later in this chapter.
	A SIMM error has occurred. Make sure your SIMM is installed correctly (see Appendix D, "Installing SIMMs." Replace the SIMM that caused the error. Or press the GO button on the printer to continue without configuring the SIMM that caused the error. If the SIMM has more than one bank of memory, the good banks will be automatically configured.
	A recoverable error has occurred, such as a paper jam, the top cover is open, or the toner cartridge is missing.
	A fatal error has occurred. Turn the printer off and then back on. If the same light pattern reappears, turn the printer off again and leave it off for about 10 minutes, then turn it back on. If the same light pattern reappears, call your HP service representative.
	When the IR port status light is on, a connection has been established. If you are printing to the IR port and the status light does not come on, make sure the printer is in Ready Mode and that the IR port you are printing from is within range of operation and is IrDA-compliant. If you continue to have trouble printing, refer to the "Infrared Port Not Responding" table, later in this section.

Data Error Light Patterns

If the Error and Data lights on the Status Panel are lit, simultaneously press the GO and RESET buttons on the printer to display a secondary light pattern. This secondary light pattern, or data error light pattern, will more precisely describe the problem. Possible data error light patterns are listed in the first column of the following table. In addition, your computer screen may or may not display a message similar to the message listed in the second column. Where more than one data error light pattern is possible, corresponding computer messages are listed in the second column (for example, 51, 52, or 55 error). If any of these errors persist, call your HP service representative.

Data Error Light Pattern	Computer Message	Description	Recommended Action
	20 MEM OVERFLOW	The printer received more data from the computer than can fit in its available user memory.	Press the GO button on the printer to print the transferred data (data loss may result), then make more memory available in the printer by removing some fonts, macros, or any other data from memory or by simplifying the page sent to the printer, or by installing additional memory.
	21 PRINT OVERRUN	The data (dense text, rules, raster, or vector graphics) sent to the printer was too complex.	Press the GO button on the printer to resume printing. You may lose some data. Try to simplify your print job. You may need to install additional memory, or change the resolution to 300 dpi, or select raster mode in your software.
	22 IO ERROR	The computer and printer are not communicating because of improper signal protocols. Indicates a loose cable connection or a bad or poor quality cable.	Reseat the cable and make sure you are using a high-quality cable (see "Accessories and Supplies" in Chapter 5).
	40 ERROR	Indicates an abnormal connection break occurred while transferring data from the computer.	Press the GO button on the printer to clear the error message.
	41 ERROR	A temporary error occurred while printing. This error most commonly occurs when the printer picks two sheets of paper at once. The page containing the error is reprinted automatically.	Remove the page from the output tray and press the GO button on the printer.

Data Error Light Pattern	Computer Message	Description	Recommended Action
	51, 52, or 55 ERROR	The printer detected a temporary error condition.	Turn the printer off then back on. If the problem persists, contact your HP service representative.
	68 SERVICE or 68 READY/SERVICE	The printer's nonvolatile memory (NVRAM) is full.	Press the GO button on the printer to clear the error message. Also check your printer settings. If the problem persists, contact your dealer or HP service representative.
	MISC	The printer detected a problem.	Call your dealer or HP service representative.

Power, Tray Operation, and Printer Response Time

Situation	Solution
Printer not on.	Make sure the power cable door is completely closed and the power cable is firmly plugged into the power outlet. Then, make sure the printer is on (push the printer's On/Off button so the button is pushed in). If the printer still does not come on, make sure the power source is energized (has power).
Printer generally slow to respond.	Printer speed is highly dependent on how your software application is set up and which printer driver you are using. You may need to add more memory (see "Accessories and Supplies," in Chapter 5).
Printer slow to switch between personalities.	You need at least 13 MBytes in your printer for maximum efficiency in personality switching (for example, switching between PCL and PostScript).
Printer draws media from the wrong tray.	If the Tray 1 selection is available in your software, make sure it is set correctly. If there is paper in Tray 1, remove it.
Cannot print from Tray 1.	Add paper to Tray 1 if necessary. If you are manually feeding paper and the Data light is flashing, press the GO button to feed the next sheet of paper.
Cannot print from Tray 2.	Push Tray 2 firmly into printer or add paper if necessary. If there is paper in Tray 1, remove it.

Computer or Interface Communications Problems

Situation	Solution
Computer software problem.	Make sure that your computer is working correctly by printing with a software application you know works or by printing a DOS file to see whether or not the problem is with your software application or printer driver. For example, type `C:\dir>LPTn` at the DOS prompt, where **n** is the number of the computer port the printer is connected to, such as LPT1, then press the GO button on the printer. Also check the printer setup menu to verify that the correct driver is installed.
Computer port not working.	Make sure that your computer's port is configured and working properly. One way to do this is to connect another printer, if available, to that port on your computer and print an application that you know works.
A message on your computer screen says the printer port is not responding.	Cable not connected to printer. Or printer is not in Ready Mode. Or the cable is not the correct type (IEEE-1284). You might also try increasing the I/O timeout duration in your software application (see your software application manual).
Shared printer problems.	Connect only one computer directly to the printer at a time, and then print with an application that you know works to see whether or not the printer works from each computer sharing the printer.

Computer displays DOS messages such as:
`Write Fault Error Writing Device LPTn: Abort, Retry, Ignore?`
	Add a Mode command to your computer's AUTOEXEC.BAT file for the parallel port. It should be inserted immediately following the PATH statement:
	For DOS versions earlier than 4.0, add:
	`MODE LPT1:,,P`
	For DOS versions 4.0 and later, add:
	`MODE LPT1:,,B`
	Your interface cable could be faulty; see the "Blank, Garbled, or Incomplete Pages or Interrupted Printing" table later in this section.

IR port not responding (no printing).	See the table "Infrared Port Not Responding," in the next section.

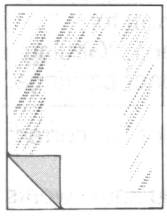
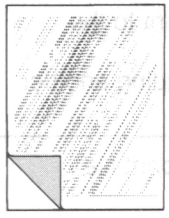
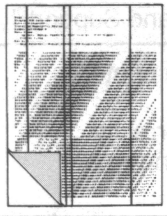
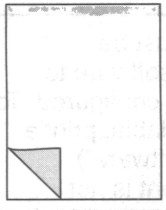
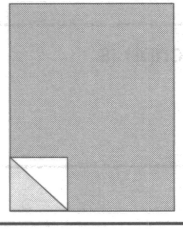
Infrared Port Not Responding

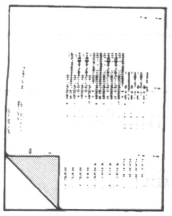
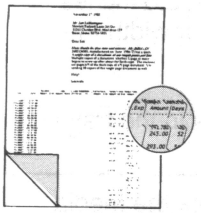
Situation	Solution
The connection cannot be established or the transmission seems to be taking longer than usual.	Make sure the device you are using is IrDA-compliant; look for an IrDA symbol on the device or refer to the manual for the device for IrDA specifications. Make sure that the operating system on your computer includes an IR driver and your application uses a HP LaserJet 5P/5MP compatible printer driver. (Note - complex pages also take longer to print). Make sure you have positioned the device within the range of operation and that no objects, such as a finger, paper, books, or bright light, are interfering with the connection. Also make sure the two IR ports are clean (free from dirt and grease). Bright light of any kind (sunlight, incandescent light, fluorescent light, or light from an infrared remote control, such as those used for TVs and VCRs) shining directly into one of the IR ports may cause interference. Make sure that no bright light is shining directly into either IR port. Position the device closer to the IR port on the printer.
The printer prints only part of a page or document.	The connection has been broken during transmission. If you move the portable device during transmission, the connection can be broken. IrDA-compliant devices are designed to recover from temporary connection interruptions. Re-establish the connection (depending on the device you are using, you can have anywhere from 3 to 40 seconds to re-establish the connection).
The print job has been properly sent to the printer, but the printer will not print.	If the connection is broken before the entire print job has been transmitted to the printer (printing has not yet started), the printer may not print any of the job. If the Data light is on, press the RESET button to clear the printer's memory. Then, position the device within the range of operation, and print the job again.
The IR status light turns off during transmission.	The connection may have been broken. If the Data light is on, press the RESET button to clear the printer's memory. Then, position the device within the range of operation, and print the job again.

Blank, Garbled, or Incomplete Pages or Interrupted Printing

Situation	Solution
Blank pages print (missing data problem).	Turn the printer off then back on. The toner cartridge sealing tape is not removed or may be broken. Remove sealing tape from toner cartridge. See "To Install the Toner Cartridge" in Chapter 1, "Getting Started," or the installation guide that came with your toner cartridge.
Garbled pages print, there are overprints, or a portion of a page prints.	Make sure that your software application is configured for the correct printer. Replace the printer interface (I/O) cable with a cable you know works to see whether or not the cable is bad. Your parallel printer cable quality may be bad. Use only a high-quality IEEE-1284–compliant cable. For an HP cable part number, see "Accessories and Supplies" in Chapter 5, "Service and Support." The printer was set to PCL and a PostScript job was sent to the printer. The data file sent to the printer may be corrupt. Try sending another file to see whether or not it prints.
Data missing, but there are no printer messages.	1. Check your software application to make sure the print file contains no errors by printing to another printer. 2. Make sure your cable is securely connected to both the printer connector and the computer connector. 3. Your parallel printer cable may be bad. Use only a high-quality IEEE-1284 compliant cable. For an HP cable part number, see "Accessories and Supplies" in Chapter 5, "Service and Support."
Printing stops in the middle of the job.	Make sure your cable is securely connected to both the printer connector and the computer connector. If you are on a network, make sure your computer is correctly configured or there is not a network problem (see your network administrator). Make sure your line voltage is steady and within printer specifications (see Appendix B, "Environmental Specifications").
Printer prints some wrong typefaces, fonts, or formats.	The typeface or font is not present in the printer and must be downloaded by your software application. Check your software to ensure the correct printer driver has been installed and configured. To verify that the typeface, font, or format you want is available, print a typeface list (see Chapter 3, "Understanding Printer Software"). Or your software is selecting a substitute font for one that is not available in the printer. (See your software application manual for font selection.)
Printer prints in wrong personality (extra characters print or no characters print).	Make sure that the desired personality (such as PostScript) is installed in the printer. Also check personality setting.

Print Quality Problems

Situation	Solution
	A white streak or faded area appears on the page (in the direction the paper passes through the printer): The toner cartridge toner supply is low. Remove the toner cartridge from the printer and rotate it back and forth. If shaking the cartridge does not improve the print quality, replace the toner cartridge. The print density adjustment is too light. Adjust the density adjustment setting (see Chapter 2 "Printing"). Wipe off the mirror using the cleaning brush supplied with the printer (see "To Clean the Printer," later in this chapter). The toner cartridge may be damaged, try a new toner cartridge.
	Faded-out areas that are generally rounded occur randomly on the page: The moisture content of the paper is uneven or the paper has moist spots on its surface. Try paper from a different manufacturer. The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try paper from a different manufacturer. If using paper within the specification required by the printer (refer to Appendix C, "Media Specifications") does not correct your problem, your printer may need service. Contact your authorized HP dealer or your HP service representative.
	Sharp black streaks appear on the page (in the direction the paper passes through the printer): The photosensitive drum inside the toner cartridge has probably been scratched. Replace toner cartridge.
	Toner smears appear on the leading edge (as it passes through the printer) of the paper: The paper guides are dirty. Clean the printer as described in "To Clean the Printer" later in this chapter. If toner on the paper is loose or can be wiped off easily; your fuser may be damaged. See your HP service representative. Moisture content is too high in media or environment.
	If the amount of background toner shading becomes unacceptable, the following procedures may help clear this condition: • *Increase* the density setting (see "Adjusting Print Density" in Chapter 2). This will *decrease* the amount of background shading. • Change the paper to a lighter basis weight. • Check the printer's environment; very dry (low humidity) conditions can increase the amount of background shading. • Replace the toner cartridge.

	Marks appear repeatedly on the printed side of the page (in the direction the paper passes through the printer): The toner cartridge is damaged. The circumference of the toner cartridge drum is 3 inches (76 mm). If a repetitive mark occurs on the page every 3 inches (76 mm), replace the toner cartridge. If the mark occurs on the back of the page, the problem will likely correct itself after a few more pages.
	Characters are improperly formed, producing hollow characters. Your paper stock may be too slick. Try a different paper. If characters are improperly formed, producing a wavy effect, contact your HP service representative.

PostScript Printing

The items below are PostScript language–specific and may occur where several printer languages are used and in shared printer environments.

Situation	Solution
The job prints in Courier (the printer's default typeface) instead of the typeface you requested.	The requested PostScript typeface is not present in your printer or was not downloaded, or is not present in your computer. Set your software to download the font with each job, or download the font manually before printing the job. If requesting a TrueType font, try sending it as Type 42 without substituting PostScript fonts. Refer to on-line help for more information
A page fails to print.	Set your printer driver to print PostScript errors and reprint the document. If an error page prints, see "A PostScript error page prints" below. If nothing prints, check your cable connections and software configurations. Refer to on-line help for more information. If the page still does not print, reinstall the printer software.
A PostScript error page prints.	Make sure the print job is a PostScript job. If there is a memory error, try reducing the complexity of your document (fewer fonts, lower resolution, fewer graphics, and so on). If there is still a memory error, you may need to install more memory. Refer to on-line help for more information.

Repeated Paper Jams

Situation	Solution
General repeated paper jam problems.	Make sure that Tray 2 is completely pushed in and that media is correctly loaded in trays (see Chapter 2, "Printing"). Make sure the media you are using meets the specifications described in Appendix C, "Media Specifications."
Repeated jams from Tray 1.	Paper is longer than 14 inches (356 mm) or wider than 8.5 inches (216 mm), which is greater than the maximum length or width the printer can feed and will cause the printer to jam. Paper is shorter than 5 inches (127 mm). Or you may have loaded more than one type of media in the tray at one time.
Repeated jams from Tray 2.	If jams persist after you have cleaned the printer, check the media specifications and verify that you are correctly loading Tray 2 (see Chapter 1, "Getting Started").

Clearing Paper Jams

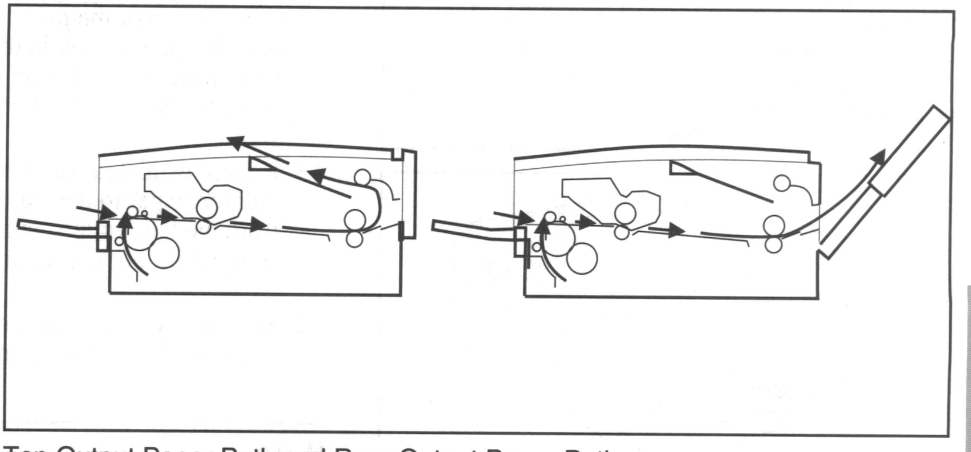
If the printer stops printing, look for jammed paper in the printer. Figure 4-1 shows the path that paper normally travels through the printer when the Rear Output Tray is closed and open. When the Rear Output Tray is being used, the paper travels in a straight-through path.

Paper jams occur most often when:

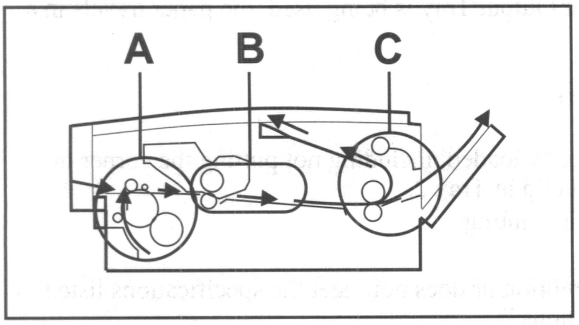
- Tray 1 and Tray 2 are not correctly loaded, including not putting the corner of the paper stack under the metal clip in Tray 2.
- Tray 2 is removed while a job is printing.
- Tray 2 is filled too full.
- Your print media is in poor condition or does not meet the specifications listed in Appendix C, "Media Specifications."
- Small pieces or bits of paper remain in the printer.

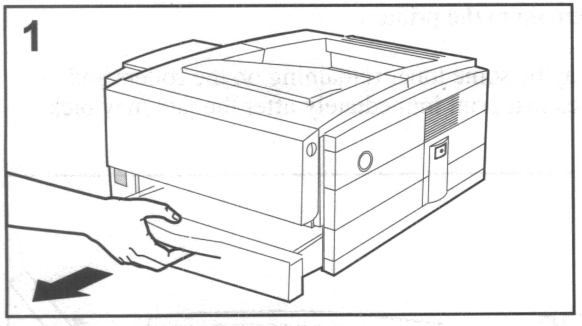
After a jam has occurred, there may be some toner remaining on the rollers and guides inside the printer. The pages that print immediately after the jam may pick up this toner.

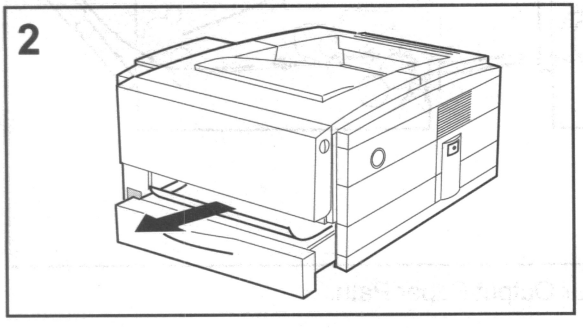
Figure 4-1

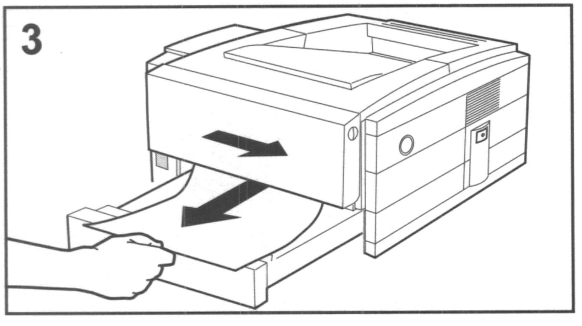


Top Output Paper Path and Rear Output Paper Path.









To Remove Jammed Paper

To remove jammed paper from the printer, check each of the following three areas in the order in which they are listed:

A Tray 2 and the paper feed area
B Toner cartridge area
C Rear output area

Check for paper jammed in Tray 2 and the paper feed areas:

1 Pull Tray 2 straight out of the printer.

2 If there is misfed paper in Tray 2 (or a loose sheet on top of the paper stack), pull the paper out. The paper stack in the tray must be underneath the metal corner clip of the tray in order for paper to feed properly.

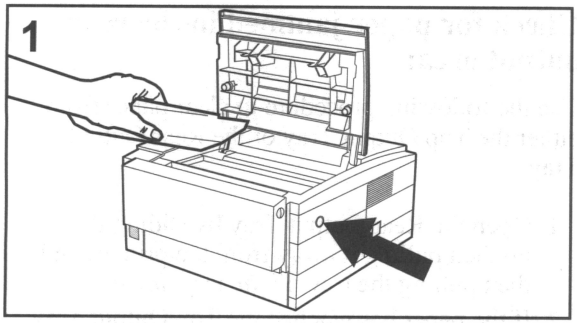
3 If there is misfed paper in the paper feed area, pull the paper to the side as shown to release it from the feed rollers, and then pull the paper straight out of the printer.

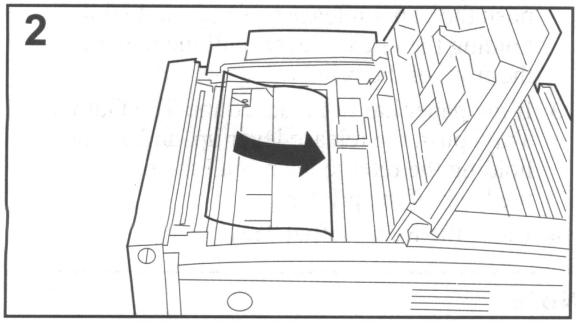
4 Set the tray on the table or desk and slide the tray completely back into the printer.

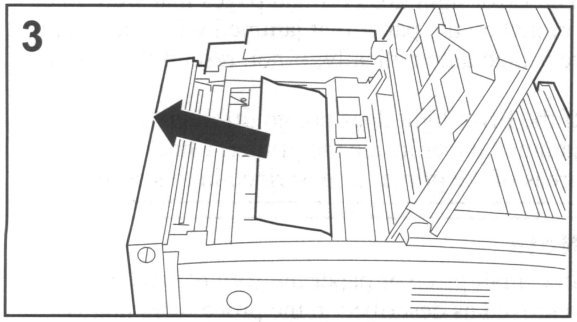
Note

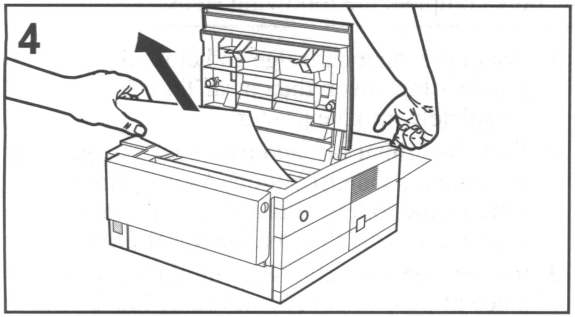
To continue printing after clearing jammed paper from the printer, either open and close the top cover or press the GO button on the printer's Status Panel. The Error light goes off and pages that were to be printed on the paper that jammed will generally be reprinted automatically; if not, resend the print job.

If the Error light does not go off, there is still jammed paper inside the printer. Check the other areas of the printer as described next in this section.









Check for paper jammed in the toner cartridge area:

1 Open the printer's top cover, and then remove the toner cartridge.

Caution

Because light damages the cartridge's photosensitive drum, do not expose the cartridge to light for more than a few minutes.

2 If the leading edge of the paper has passed beyond the plastic cover, pull the paper towards the rear of the printer until it is free.

Caution

Paper that has passed beyond the toner cartridge area may contain loose (unfused) toner on it. Be careful not to touch the loose toner or shake it loose into the printer as you are removing the paper.

3 Pull the paper out of the printer.

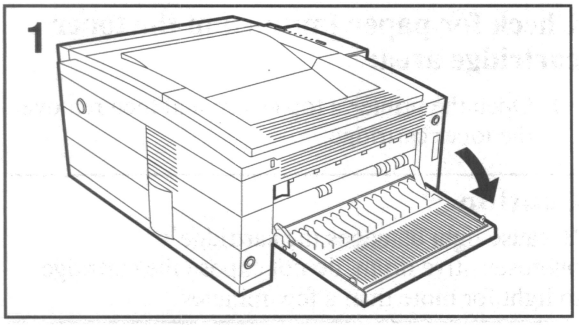
4 If the paper is difficult to remove, open the Rear Output Tray so it is all the way down (perpendicular to the printer), then push the paper release lever up, and while holding the release lever, pull the paper out from the toner cartridge area.

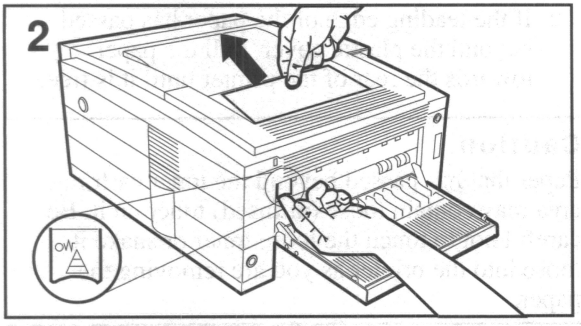
5 Replace the toner cartridge, and then close the printer's top cover.

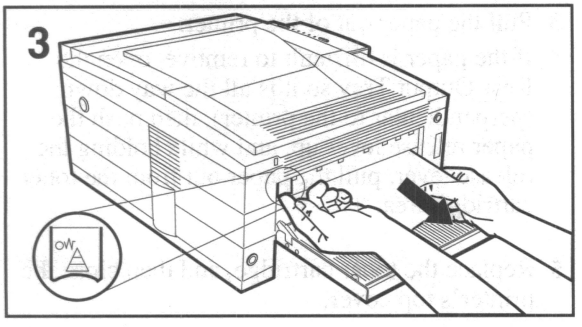
Note

I f printing has not started after closing the Top Cover, press the GO button. The Error light should go out and the jammed pages will generally be reprinted automatically. If not, resend the print job.

If the Error light does not go off, there is still jammed paper inside the printer. Check the other areas of the printer as described in this section.







Check for paper jammed in the rear output area:

Use the following procedure to clear paper from either the Top Output Tray or the Rear Output Tray.

1. Open the Rear Output Tray by sliding the tray up then pulling it away from the printer, and then pulling the tray *all the way down.*
2. If the paper has reached the Top Output Tray, push the paper release lever up, and while holding the release lever, pull the paper out the front of the printer.
3. If the paper has not reached the Top Output Tray, push the release lever up, and while holding the release lever, pull the paper out of the back of the printer
4. Close the Rear Output Tray.

Note

The Error light goes off and pages that were to be printed on the paper that jammed will generally be reprinted automatically; if not, resend the print job.

If the Error light does not go off, there is still jammed paper inside the printer. Check the other areas of the printer as described in this section.

Note

If a small piece of paper has torn off and cannot be removed as described in the procedures in this section, complete the following steps:

1. Install the toner cartridge and close the printer's top cover, then push Tray 2 completely into the printer.
2. Turn the printer off, and then back on again by pressing the On/Off button. As the printer restarts, the rollers inside the printer move slightly, moving the small piece of paper.
3. Repeat step 2 several times until the small piece of paper can be removed by hand.

Maintaining the Printer

Your printer requires minimum routine maintenance. To maintain your printer, clean it periodically and maintain the toner cartridge to achieve optimum print quality. To maintain print quality, thoroughly clean your printer every time you change the toner cartridge or whenever print quality problems occur. Follow the procedures in this section, "To Clean the Printer" and "To Extend Toner Cartridge Life," to accomplish these tasks.

Note

Hewlett-Packard cannot recommend use of non-HP toner cartridges, either new or remanufactured. Because they are not HP products, HP cannot influence or control their quality (see "Warranty" in Chapter 5, "Service and Support").

Caution

To avoid permanent damage to the toner cartridge, do not use ammonia-based cleaners on or around your printer.

Maintaining the Toner Cartridge

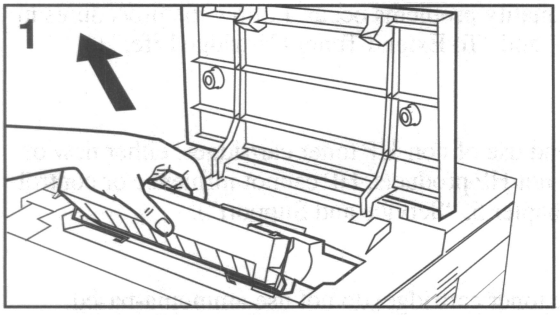
The life of your toner cartridge depends on the amount of toner your print jobs require. When you print word-processed text, average toner cartridge yield is 4,400 pages, printed at 5% coverage (a typical business letter is about 5% coverage). This assumes that the print density setting is in the middle range (see Chapter 2, "Printing").

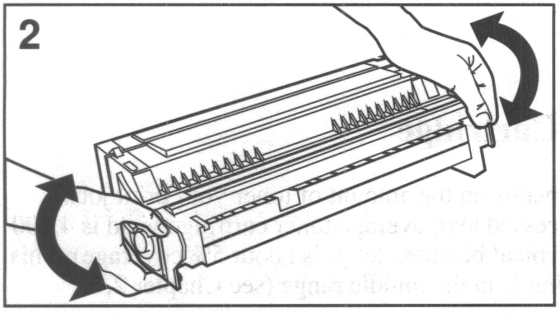
Using EconoMode can further extend average toner cartridge yield (see Chapter 2, "Printing").

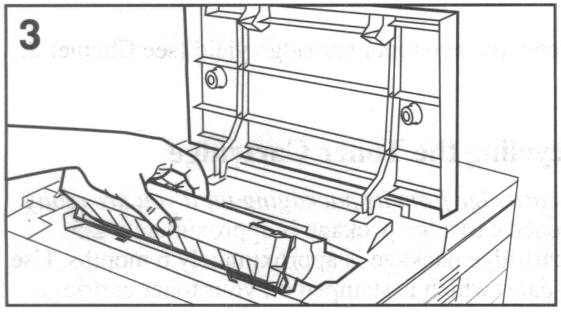
Storing, Installing, and Recycling the Toner Cartridge

Storing: *Do not remove the toner cartridge from its packaging until you are ready to use it.* The shelf-life of an unopened cartridge package is approximately 2.5 years; the shelf-life of an opened cartridge package is approximately 6 months. Use the cartridge before the expiration date (which is stamped on your toner cartridge box).

Installing and Recycling: To install a new toner cartridge, follow the instructions in the *Installation Instruction Guide*, included in the toner cartridge box. A separate *Recycling Instruction Guide* is also included.







To Extend Toner Cartridge Life

If the amount of toner in the toner cartridge is running low (if print quality is poor), you can extend the life of your toner cartridge and *temporarily* re-establish print quality by redistributing the toner.

1 Open the printer's top cover by pressing the release button on the side of the printer, and then remove the toner cartridge.

2 Shake the toner cartridge gently back and forth several times to redistribute the toner.

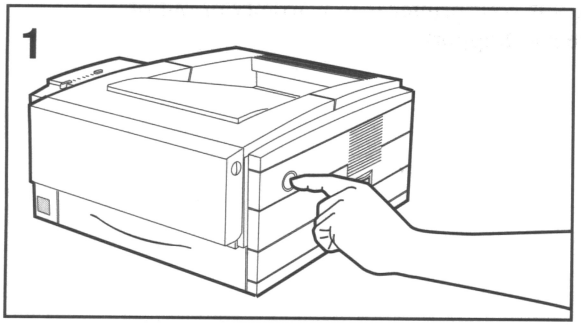
Caution

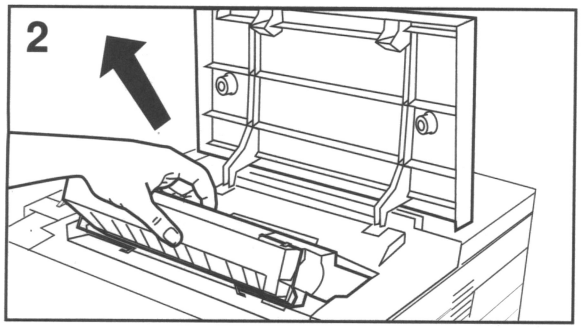
Do not turn the cartridge upside down—toner can escape from the cartridge. If toner gets on your clothes, wipe it off with a dry cloth, and wash your clothes in **cold** water. *Hot water sets toner into fabric.*

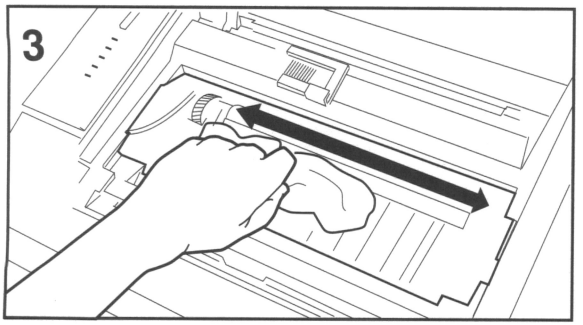
---

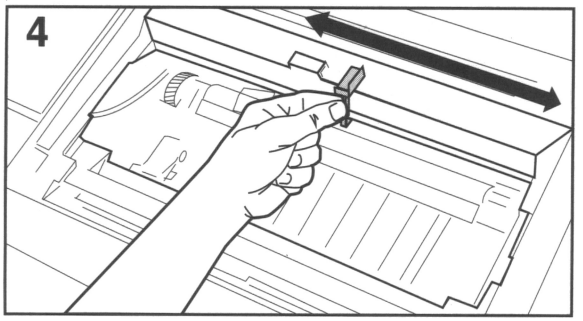
3 Reinsert the toner cartridge and close the top cover.

If the print remains light, replace the toner cartridge using the instructions in the *Installation Instruction Guide,* included in the toner cartridge box. Keep a spare toner cartridge on hand (for ordering information, including part numbers, see "Accessories and Supplies," in Chapter 5).









To Clean the Printer

1 Turn the printer off and unplug the power cable, and then open the printer's top cover by pressing the top cover release button on the side of the printer.

2 Remove the toner cartridge.

Caution

Because light damages the cartridge's photosensitive drum, do not expose the cartridge to light for more than a few minutes.

3 With a *dry* lint-free cloth, wipe any residue from the paper path area and the toner cartridge cavity as shown.

4 Remove the cleaning brush from the shoulder above the toner cartridge area. Place the flat part of the brush on the shoulder while allowing the brush to be inserted below the shoulder where the mirror is located. Move the brush from side to side several times to clean the mirror.

5 Replace the brush and toner cartridge, close the top cover, plug in the power cable, and then turn the printer on.

Caution

Do not touch the transfer roller (shown in the illustration) with your fingers. Skin oils on the roller can cause print quality problems.

Caution

If toner gets on your clothes, wipe it off with a dry cloth and wash your clothes in **cold** water. *Hot water sets toner into fabric.*

Calling for Help

If you try all the suggestions given in this chapter and still need assistance, call the authorized HP dealer where you purchased your printer. For additional sources of assistance (your coverage may vary if your printer is in warranty or out of warranty), see Chapter 5, "Service and Support."

Service and Support

Warranty

This warranty gives you specific legal rights. You may also have other rights, which may vary from area to area.

Hewlett-Packard warrants its computer hardware products against defects in materials and workmanship for a period of one year from receipt by the end user.

Hewlett-Packard warrants its software for 90 days from the date of purchase and warrants that the software will execute its programming instructions when properly installed on the computer for which it is intended, and that the media upon which the software is recorded will be free from defects in materials and workmanship under normal use.

During the warranty period, Hewlett-Packard will, at its option, either repair or replace hardware products that prove to be defective. The sole remedy for software shall be to return the diskettes to Hewlett-Packard for replacement.

Should Hewlett-Packard be unable to repair or replace the product within a reasonable amount of time, a refund of the purchase price may be made upon return of the product. To have your printer serviced by Hewlett-Packard, you must make arrangements to have it serviced in the country of purchase.

Warranty Exclusions

The warranty on your HP LaserJet printer shall not apply to defects or damage resulting from:

- Improper or inadequate maintenance by customer.
- Customer-supplied software or interfacing.
- Unauthorized modification or misuse.
- Operation outside of the environmental specifications for the product.
- Operation of nonsupported printing media.
- Duty cycle abuse (see later explanation).
- Operating the printer from a mechanical switchbox without a designated surge protector.
- Improper site preparation and maintenance.
- Use of non-HP toner cartridges (see later explanation) or SIMMS.

The use of non-Hewlett-Packard toner cartridges does not affect either the warranty or any maintenance contract purchased from Hewlett-Packard. However, if an HP LaserJet printer failure or printer damage is found to be directly attributable to the use of any non-HP product, the repair will not be covered under the warranty or HP maintenance contract. Hewlett-Packard cannot recommend use of non-HP toner cartridges, either new or remanufactured, because they are not HP products and Hewlett-Packard cannot influence or control their quality.

Operation of the printer beyond the limit of its duty cycle (printing more than the equivalent of 12,000 single-sided pages per month) shall be deemed printer abuse and all repairs thereafter will be billed on a time and materials basis.

If you are using a mechanical switchbox, ensure that it is equipped with a surge protector. Damage to your printer could occur from the use of unprotected mechanical switchboxes.

The warranty period begins either on the date of delivery or, where the purchase price includes installation by Hewlett-Packard, on the date of installation.

Warranty Limitations

The warranty set forth above is exclusive and no other warranty, whether written or oral, is expressed or implied. Hewlett-Packard specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

Some areas do not allow limitations on how long an implied warranty lasts, so the preceding limitation or exclusion may not apply to you. However, any implied warranty of merchantability or fitness is limited to the one-year duration of this written warranty.

In no event will Hewlett-Packard or its suppliers be liable to you for any consequential or incidental damages, including any lost profits or lost savings, or for any claim by any party, even if a representative of HP or its suppliers has been advised of the possibility of such damages.

Some areas, states, or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.

Service and Support During the Warranty Period

If your hardware should fail during the warranty period, bring your printer to an authorized HP dealer, repair center, or HP Customer Service Center. To locate the nearest authorized Customer Service Center in your area, see "Worldwide HP Sales and Service Offices," later in this chapter.

When sending equipment to an HP Customer Service Center or service-authorized HP dealer, follow the repacking guidelines in this chapter. We recommend insuring the equipment for shipment. Also include a copy of your proof of purchase.

Caution

Shipping damage as a result of inadequate packaging is the customer's responsibility. Use the original packing materials whenever possible.

For telephone assistance about using your printer within the one-year warranty period, see the tables in "Worldwide HP Sales and Service Offices," later in this chapter.

Service and Support After the Warranty Period

If your hardware fails after the warranty period and you have an HP Maintenance Agreement, request service as specified in the agreement. If you do not have an HP Maintenance Agreement, contact a service-authorized HP dealer or an HP Customer Service Center to obtain service (see the tables in "Worldwide HP Sales and Service Offices," later in this chapter).

When sending equipment to an HP Customer Service Center or a service-authorized HP dealer, follow the repacking guidelines in the following section. Hewlett-Packard recommends insuring the equipment for shipment.

For telephone assistance about using your printer past the one-year warranty, you have two choices:

1 You can call (900) 555-1500 (U.S.) at $2.50* per minute.
2 You can call (800) 999-1148 (U.S.) at $25.00* per call (VISA or MasterCard).

Outside the U.S., see the tables in "Worldwide HP Sales and Service Offices," later in this chapter.

*Prices subject to change without notice.

Repacking Guidelines

- Send a self-test page with the printer if possible (simultaneously press the GO and RESET buttons on the printer to print a self-test page before you turn off the printer).
- Include print samples and five sheets of the paper or forms you are having trouble printing, if possible.
- Remove and retain the toner cartridge.
- Use the original shipping container and packing materials, if possible.

Note

If you have already disposed of your printer's packaging material, new packaging material can be ordered from HP's Support Materials Organization at the following phone numbers:

(800) 227-8164 (U.S.)

(416) 678-9430 (Canada)

Outside the U.S., see the tables in "Worldwide HP Sales and Service Offices," later in this chapter.

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1. The Software may be used on one HP LaserJet printer.
2. The Software may not be copied except for archival purposes or for backup, error identification, or replacement of defective media. All authorized copies must bear the copyright notice on or in the original.
3. The Software may not be disassembled, decompiled, decrypted, or reverse engineered unless HP's prior written consent is either obtained or not required by law. Upon request, the user will provide HP with reasonably detailed information regarding any disassembly, decompilation, decryption, or reverse engineering.
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Accessories and Supplies

Listed below are the accessories and supplies, including supplemental documentation you can order for your HP LaserJet 5P or 5MP printer. When ordering, have the part numbers ready for the items you wish to order.

Option	Part Number	Description or Use
Toner Cartridge	C3903A	Replacement toner cartridge.
Memory upgrades	1 MByte—C3130A 2 MByte—C3131A 4 MByte—C3132A 8 MByte—C3133A 16 MByte—C3146A	Adds up to 48 MBytes of memory to the HP LaserJet 5P printer, for a total of 50 MBytes. Adds up to 32 MBytes of memory to the HP LaserJet 5MP printer, for a total of 35 MBytes.
Adobe's PostScript Level 2 SIMM for the HP LaserJet 5P	C3152A	Adds PostScript Level 2 language and 1 MByte of memory to the HP LaserJet 5P printer; includes software for Macintosh, Windows 3.1 and 3.11, and "HP LaserJet 5MP Macintosh Notes" (factory-installed in the 5MP printer).
IEEE-1284 Parallel Cable	2 Meter A to B—C2950A 3 Meter A to B—C2951A 2 Meter A to C—C2945A 3 Meter A to C—C2946A 10 Meter A to C—C2947A	IEEE-1284-compliant cables, where: A=host computer connector (A-type) B=large printer connector (B-type) C=small printer connector (C-type)
LocalTalk Network cable for Macintosh	92215N	Connect to aLocalTalk Network.
Serial printer cable for Macintosh	92215S	Directly connect to a Macintosh computer.
HP JetDirect EX print servers (external)	J2382B J2383B J2593A J2594A	Ethernet (1 parallel ports) TokenRing (1 parallel ports) Ethernet (3 parallel ports) TokenRing (3 parallel ports)
HP Printer Pal (external)	C2971A	Printer fax accessory. Allows faxes to be printed by the printer; faxes can also be sent electronically from the PC. Availability outside the US may very.
Extra Paper Cassette (Tray 2)*	R75-4000-000CN	Universal tray.

* This item must be ordered through HP Parts Direct Ordering, (800) 227-8164. Outside the U.S., see the tables "Worldwide HP Sales and Service Offices," later in this chapter.

Supplementary Documents and Help

The technical reference guides listed below are designed for programmers. The paper specification guide is useful for purchasing agents and paper buyers. These documents are available in English only.You can order the documents listed below. There is a charge for some documents.

Title	Part Number
The *PCL/PJL Technical Reference Package* contains the following documents:* PCL5 Printer Language Technical Reference Manual. Explains the PCL 5 printer language for experienced users and programmers. Printer Job Language Technical Reference Manual. Explains HP's Printer Job Language (PJL) for experienced users and programmers. PCL/PJL Technical Quick Reference Guide. PCL Comparison Guide. Describes the different implementation of commands and extensions across the printer family supporting PJL and PCL 5.	5961-0601
HP LaserJet 5MP Macintosh Notes* (included with HPLaserJet 5MP Printer and optional Adobe *PostScript Level 2* SIMM)	C3155-90901
HP LaserJet Printer Family Paper Specification Guide*	5002-1801

* This item must be ordered through HP Parts Direct Ordering, (800) 227-8164. Outside the U.S., see the tables in "Worldwide HP Sales and Service Offices," later in this chapter.

Help From HP First Fax

Use HP First (Faxed Information Retrieval System) to get information faxed to you. HP First topics include upgrade information, data sheets, application notes, and other hardware and software information. For availability in your country, consult the "Worldwide HP Sales and Service" listing later in this chapter.

Help From the HP Customer Support Center

If your organization's support personnel or your dealer are unable to answer your question, in many countries, HP has a Customer Support Center available to help you (coverage may vary if your printer is in warranty or out of warranty). Consult the "Worldwide HP Sales and Service" listing later in this chapter. Before calling, try the following:

- Read and try the troubleshooting suggestions for your printer.
- Print a self test, if possible.
- Check with your software vendor for help if you suspect a software problem

Worldwide HP Sales and Service Offices

To find a service-authorized HP dealer, contact one of the offices in the table "Worldwide Hewlett-Packard Sales and Service Offices." For items marked with an asterisk (*) contact the HP office listed in the table.

Worldwide Hewlett-Packard Sales and Service Offices

Argentina:

Hewlett-Packard Argentina
Montañeses 2140
1428 Buenos Aires
Argentina
Telephone: 54 1 781-4061/69
Customer Support Center: *
HP First Fax: *

Australia / New Zealand:

Hewlett-Packard Australia Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130
Australia
Telephone: 61 3 272-2895
Customer Support Center: *
HP First Fax: 61 3 272 2627

Austria:

Hewlett-Packard Ges.m.b.H.
Lieblgasse 1
P.O. Box 72
A-1222 Vienna
Austria
Telephone: 43 1 2500-0
Customer Support Center: *
HP First Fax: 0660-8128

Belgium:

Hewlett-Packard Belgium SA/NV
Boulevard de la Woluwe, 100, Woluwedal
B-1200 Brussels
Belgium
Telephone: 32 2 761 31 11
Customer Support Center: 31-20-681-7174
HP First Fax (Flemish): 0800-17043
HP First Fax (German): 0800-11906

Brazil:

Edisa Hewlett-Packard
Alameda Rio Negro 750 Alphaville
06400 Barueri Sao Paulo
Brazil
Telephone: 55 11 709-1444
Customer Support Center: *
HP First Fax: *

Canada:

Hewlett-Packard (Canada) Ltd.
17500 Trans-Canada Highway
Kirkland, Quebec H9J 2X8
Canada
Telephone: 1 (514) 697-4232

Hewlett-Packard (Canada) Ltd.
6877 Goreway Drive
Mississauga, Ontario L4XX 1M8
Canada
Telephone: 1 (416) 678-9430

Canadian Customer
Information Center: 1 (800) 387-3867

HP Direct Marketing: 1 (416) 671-8383

Hardware Service: 1 (800) 268-1221

Customer Support Center
(English service only): 1 (208) 323-2551

China:

China Hewlett-Packard Company
5-6/F, West Wing Office
China World Trade Center
No. 1, Jian Guo Men Wai Avenue
Beijing, 100004, China
Telephone: 86 1 505-3888
Customer Support Center: *
HP First Fax: *

Czech Republic: Hewlett-Packard S. R. O. Novodvorska 82 14200 Praha 414 Czech Republic Telephone: 42 (2) 471 7321 Customer Support Center: * HP First Fax: *	**Greece:** Hewlett-Packard Hellas 62, Kifissias Avenue GR Maroussi-Athens 15125 Greece Telephone: 30 1 689 64 11 Customer Support Center: * HP First Fax: *
Denmark: Hewlett-Packard A/S Kongevejen 25 DK-3460 Birkerød Denmark Telephone: 45 45 99 10 00 Customer Support Center: 31 20 681 6171 HP First Fax: 800 10453	**Hungary:** Hewlett-Packard & Magyarors g Kft. Erzsebet kiralyne utja 1/c H-1146 Budapest Hungary Telephone: 36 (1) 2524505 Customer Support Center: * HP First Fax: *
Far East Area: Hewlett-Packard Asia Pacific Ltd. 17-21/. Shell Tower, Times Square 1 Matheson Street, Causeway Bay Hong Kong Telephone: 852 599-7777 Customer Support Center: * HP First Fax: 852 506 2422	Italy: Hewlett-Packard Italiana S.p.A. Via Giuseppe di Vittorio, 9 I-20063 Cernusco sul Naviglio Milano Italy Telephone: 39 2/92 121 Customer Support Center: 31 20 581 3318 HP First Fax: 16 785 9020
Finland: Hewlett-Packard Oy Piispankalliontie 17 P.O. Box 68 FIN-02207 Espoo Finland Telephone: 358 0/887 21 Customer Support Center: 31 20 681 1214 HP First Fax: 9800 13134	**Japan:** Yokogawa-Hewlett-Packard Ltd. 3-29-21, Takaido-Higashi Suginami-Ku, Tokyo 168 Japan Telephone: 81 3 3331-6111 Customer Support Center: * HP First Fax: *
France: Hewlett-Packard France 42, Quai du Point du Jour F-92659 Boulogne France Telephone: 46 101700 Customer Support Center: 31 20 681 8260 HP First Fax: 05 905900	Korea: Samsung Hewlett-Packard Ltd. 11–20th Floors, SHP House 25-12, Yeoeuido-dong, Youngdeungpo-ku Seoul 150, Korea Telephone: 82 2 769-0114 Customer Support Center: * HP First Fax: 82 2 769 0543
Germany: Hewlett-Packard GmbH Herrenberger Strasse 130 71034 Böblingen Germany Telephone: 49 7031/14-0 (31) 20 681 71 74 Customer Support Center: 31 20 681 7174 HP First Fax: 0130 810061	**Latin American Headquarters:** 5200 Blue Lagoon Drive Suite 950 Miami, FL 33126 Telephone: 305 267 4220 Customer Support Center: * HP First Fax: *

Mexico Guadalajara: Hewlett-Packard de México, S.A. de C.V. Montemorelos No. 299 Fracc. Loma Bonita Zapopan C.P. 45060 Telephone: 669 95 00 Customer Support Center: * HP First Fax: *	**Norway:** Hewlett-Packard Norge A/S Drammensveien 169 Box 60 Sk¢yen N-0212 Olso Norway Telephone: 47 735600 Customer Support Center: 31 20 682 0094 HP First Fax: 800 11319
Mexico Monterrey: Hewlett-Packard de México, S.A. de C.V. Calzada del Valle Oriente No. 409 4o. Piso Colonia del Valle Garza García, 76030 Telephone: 378-42-40 Customer Support Center: * HP First Fax: *	**Poland:** Hewlett-Packard Polska Sp. z o.o. Ul.Newelska Nr. 6 PL-01447 Warszawa Poland Telephone: 48 22 37 50 65 Customer Support Center: * HP First Fax: *
Mexico, D.F.: Hewlett-Packard de México, S.A. de C.V. Av. Prolongación Reforma No. 470 Col. Lomas de Sta. Fe, 01210 Delegación Alvaro Obregón Telephone: 326 46 00 Customer Support Center: * HP First Fax: *	**Portugal:** Hewlett-Packard Portugal, S.A. Rua Gregório Lopes, Lote 1732A 1400 Lisboa Portugal Telephone: 351 1-3017330 Customer Support Center: * HP First Fax: *
Middle East/Africa: Middle East, Central Africa Sales Headquarters Hewlett-Packard S.A. Rue de Veyrot 39 CH-1217 Meyrin 1 (Geneva) Switzerland Telephone: 41 22/780 71 11 Customer Support Center: * HP First Fax: *	**Russia** Hewlett-Packard Representitive Office Pokrovski Blvd. 4/17 KV12 101000 Moscow Russia Telephone: 7095 923 50 01 Customer Support Center: * HP First Fax: *
Netherlands: Hewlett-Packard Nederland B.V. Startbaan 16 NL-1187 XR Amstelveen P.O. Box 667 The Netherlands Telephone: 31 20/547 69 11 31 20/681 64 73 Customer Support Center: 31 20 681 6473 HP First Fax: 08 0222420	Singapore: Hewlett-Packard Singapore (Pte.) Ltd. 150 Beach Road #29-00 Gateway West Singapore 0718 Telephone: 65 291-8554 Customer Support Center: * HP First Fax: 65 291 7951

Spain: Hewlett-Packard Española, S.A. E28230 Las Rozas Crta. de la Coruña, km 16,500 Madrid Spain Telephone: 34 1 626 16 00 Customer Support Center: 31 20 581 3319 HP First Fax: 900 9993123	**Turkey:** Hewlett-Packard Bilgisayar ve Ölçüm Sistemleri AS,. 19 Mayis cad.Nova/Baran Plaza K.12 (Headquarters) 80220 S is li-Istanbul Turkey Telephone: 90 1 224 59 25 Customer Support Center: * HP First Fax: *
Sweden: Hewlett-Packard Sverige AB Skalholtsgatan 9 Box 19 S-164 93 Kista Sweden Telephone: 46 8/750 20 00 Customer Support Center: 31 20 681 8025 HP First Fax: 020 795743	**United Kingdom:** Hewlett-Packard Limited Cain Road Bracknell GB-Berkshire RG12 1HN United Kingdom Telephone: 334 363344 Customer Support Center: 31 20 682 8291 HP First Fax: 0800 960271
Switzerland: Hewlett-Packard (Schweiz) AG In der Luberzen 29 CH-8902 Urdorf Switzerland Telephone: 41 1 7537111 Customer Support Center: * HP First Fax (French): 155 1526 HP First Fax (German): 155 1527	**United States** Hewlett-Packard Company 11311 Chinden Blvd. Boise, ID 83714 USA Customer Support Center: 208 323 2551 Monday-Friday 7 a.m. to 6 p.m. Wednesday 7 a.m. to 4 p.m. Saturday 9 a.m. to 5 p.m. (Mountain Standard Time) HP First Fax: 800 333-1917 208 334-4809 To find an authorized repair center: 800 243-9816 To purchase a service contract: 800 743-8308 Accessories and Supplies: 800 538-8787 Obtaining HP Printer Drivers: 303 339-7009 (FAX): 303 330-7655
Taiwan: Hewlett-Packard Taiwan Ltd. 8F, 337 Fu-Hsing North Road Taipei, Taiwan R.O.C. Telephone: 886 2 712 0404 Customer Support Center: * HP First Fax: *	**Venezuela** Hewlett-Packard de Venezuela Tercera Transuersal Los Ruices Norte Edificio Segre Zdo y 3er piso Caracas 1071 Telephone: 58 2 239 5664 Customer Support Center: * HP First Fax: *

Common PCL Printer Commands

PCL Printer Commands (Escape Sequences)

Most software applications do not require you to enter printer commands. See your computer and software documentation to find the method to use for entering printer commands if needed.

PCL printer commands tell the printer which tasks to perform or which fonts to use. This appendix is not intended to provide complete information about PCL commands, only to provide a quick reference for users who are already familiar with PCL command structure.

Note

The table at the end of this appendix contains commonly used PCL commands. For a complete listing and explanation of how to form PCL, HP-GL/2, and PJL commands, order the *PCL/PJL Technical Reference Package* (see "Supplementary Documents" in Chapter 5, "Service and Support").

PCL Printer Command Syntax

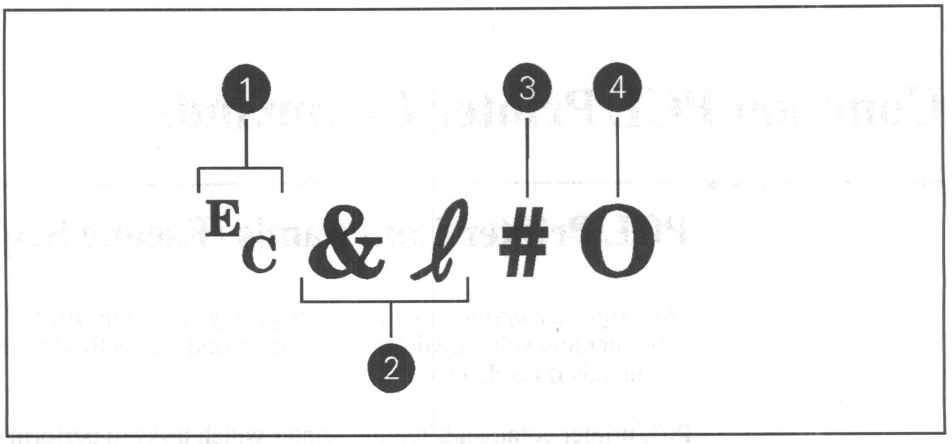
Before using printer commands, compare these characters:

Lowercase l:	ℓ	Uppercase O:	O
Number one:	1	Number zero:	Ø

Many printer commands use the lowercase letter l (ℓ) and the number one (1), or the uppercase letter O (O) and the number zero (Ø). These characters may not appear on your screen as shown here. *You must use the exact character and case specified for PCL printer commands.*

Figure A-1 displays the elements of a typical printer command (in this instance, a command for page orientation).

Figure A-1



1. Escape character (begins escape sequence)
2. Category of command
3. Value field (contains both alpha and numeric characters)
4. Uppercase letter that terminates the escape sequence

Using PCL Printer Commands

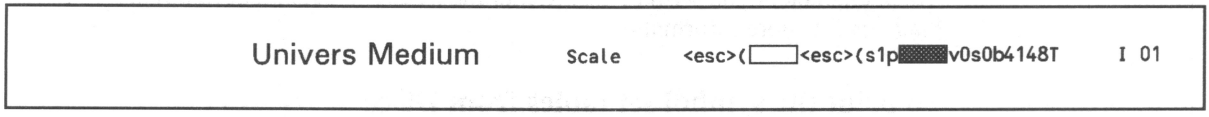
Printer commands always begin with the escape character (EC). Table A-1 shows how to enter the escape character from various software applications. (The keyboard escape key **Esc** will not produce the escape character.)

Table A-1 Software Escape Character Commands

DOS Software Package	Entry	What Appears
Lotus 1-2-3 and Symphony	Type \Ø27	027
Microsoft Word for DOS	Hold down **Alt** key and type Ø27 on the numeric keypad	←
WordPerfect for DOS	Type <27>	<27>
MS-DOS Editor	Hold down **CTRL** **P** then Esc	←
MS-DOS Edlin	Hold down **CTRL** **V** then [	^[
dBase	?? CHR(27)+"command"	?? CHR(27)+" "

PCL Font Selection

PCL printer commands to select fonts can be found on the PCL typeface list (see Chapter 3, "Understanding Printer Software"). A sample font selection is shown below. Notice the two variable boxes for the symbol set "Ec" and point size:



These variables must be filled in or the printer will use defaults. For example, if you want to use characters from a symbol set that contains line-drawn characters, select the 10U (PC-8) or 12U (PC-850) symbol set.

Table A-2 Common Symbol Set Values

Code	Symbol Set	Code	Symbol Set
8U	HP Roman-8 Default Symbol Set	19U	Windows 3.1 Latin 1
10U	IBM Layout (PC-8) (code page 437)	9E	Windows 3.1 Latin 2 (commonly used in Eastern Europe)
12U	IBM Layout for Europe (PC-850) (code page 850)	5T	Windows 3.1 Latin 5 (commonly used in Turkey)
8M	Math-8	579L	Wingdings Font
7J	Desktop	0N	ISO 8859/1 Latin 1
10J	PS Text	12J	MC Text
13J	Ventura International	11U	PC-8 Danish/Norwegian
14J	Ventura US	1U	Legal
6J	Microsoft Publisher	9U	Windows 3.0 Latin 1
6M	Ventura Math	17U	PC-852 Latin 2
15U	PiFont	9T	PC-Turkish
5M	PS Math	2N	ISO 8859/2 Latin 2
19M	Symbol Font (AS)	5N	ISO 8859/9 Latin 5

Point size (or pitch) is another variable. In the following example, "12U" has been filled in for the PC-850 symbol set and "12" for the point size. This printer command would select a 12-point Univers Medium font.

EC(12UEC(s1p12vØsØb4148T

Printing Symbol Sets

Symbol sets are unique groupings of characters (alphabetic, numeric, punctuation, and special symbols) designed to meet the requirements of specific languages and occupations. Symbol sets included with your HP LaserJet 5P / 5MP printer are listed in Table A-2 (in this chapter). Print copies of these symbol sets to review which characters you wish to use. (Order the *PCL/PJL Technical Reference Package* for more information.)

To print the symbol set tables from DOS:

- Type `symsets xxxx LPTx:` at the DOS prompt, where xxxx is the code for the symbol set you want to print (up to four characters, using the codes in Table A-2) and LPTx specifies the printer port your printer is connected to (usually LPT1: or LPT2:). Then press **Enter**.

  Find the code of the symbol set you want to print in Table A-2. For example, to print the Roman-8 symbol set, you'd specify "8U" as the code.

Note

Although all of the characters and symbols in these sets are printable, your software may not support some of them. Check your software documentation to see which symbol sets are supported. Look in your software manual for information on character sets, extended characters, or code pages.

Composite characters are combinations of two or more character elements. In the symbol set tables, math composite characters are shown in boxes with light shading, and line-draw composite characters are shown in boxes with dark shading. See your computer or software documentation for information about printing the characters shown in the right half of the symbol set tables (code numbers 128–155).

Setup Strings

Some software applications, like older versions of Lotus 1-2-3 for DOS, require setup strings with PCL printer commands. In the following example, the Lotus escape character (\027) is shown. This setup string would be used to change the orientation to Landscape, select the PC-8 symbol set with line-draw characters, select the small Line Printer font.

\Ø27&ℓ1O\Ø27(1ØU\Ø27(sØp16.67h8.5vØsØbØT

Several frequently used PCL printer commands are shown in Table A-3.

Table A-3 Frequently Used PCL Printer Commands

Printer Command	Function	# Refers To
Ec	Escape character	See Table A-1 or your software manual
L F	Line feed	n/a
F F	Form feed	n/a
C R	Carriage return	n/a
EcE	Resets the printer	n/a
Ec&lØH	Eject page	n/a
Ec&l#X	Indicates number of copies	1 to 32,767
Ec&l#U	Sets long-edge (left) offset registration	# of decipoints (1/720 inch)
Ec&l#Z	Sets short-edge (top) offset registration	# of decipoints (1/720 inch)
Ec&l#H	Selects paper source	Ø = prints or ejects current page 1 = Tray 2 2 = manual feed — paper 3 = manual feed — envelope 4 = Tray 1
Ec&l#A	Sets paper size or envelope size	1= Executive 2 = Letter 3 = Legal 26 = A4 100 = Commercial B5 101 = Custom 80 = Monarch 81 = Commercial 10 90 = DL 91 = International C5
Ec?&l#O	Selects orientation	Ø = Portrait 1 = Landscape 2 = reverse Portrait 3 = reverse Landscape
Ec&a#L	Sets left margin	Column number
Ec&a#M	Sets right margin	Column number
Ec&l#E	Sets top margin	Number of lines
Ec&l#F	Sets text length (bottom margin)	Number of lines from top margin
Ec&l#D	Sets line spacing	Lines per inch: (1, 2, 3, 4, 6, 8, 12, 16, 24, or 48)
Ec&d#D	Begins underline	0 = fixed 3 = floating
Ec&d@	Ends underline	n/a
Ec&k#H	Sets horizontal motion index	1/120-inch increments (compresses print horizontally)
Ec&l#C	Sets vertical motion index	1/48-inch increments (compresses print vertically)
Ec&a#R	Sets # of vertical position, rows	Sets current vertical print position to specified row number (#)
Ec*p#Y	Sets # of vertical position, dots	Sets current vertical print position to specified dot number (#)
Ec&a#V	Sets # of vertical position, decipoints	Sets current vertical print position to specified decipoint number (#)
Ec&a#C	Sets # of horizontal position, rows	Sets current horizontal print position to specified row number (#)
Ec*p#X	Sets # of horizontal position, dots	Sets current horizontal print position to specified dot number (#)
Ec&a#H	Sets # of horizontal position, decipoints	Sets current horizontal print position to specified decipoint number (#)

Specifications and Regulatory Information

Environmental Specifications

Physical Dimensions

Height	7.92 in. (201.1 mm)
Width	15.79 in. (401 mm)
Depth (body)	17.38 in. (441.7 mm)
Weight (with toner cartridge)	15.4 lb (7 kg)

Electrical Specifications

Power Requirements	**100/120V (+/- 10%) 50/60Hz (+/- 2Hz) 127 Volts NOM**	**220/240V (+/- 10%) 50 Hz (+/- 2Hz)**
Power Consumption (typical for 5P and 5MP)	During printing - 165 W (average)	During printing - 165 W (average)
	During standby – 5W (instant power save) During power save mode - 5 W	During standby – 5W (instant power save) During power save mode - 5 W
Minimum recommended circuit capacity	4 Amps	1.8 Amps

Environmental Specifications

Item	**Operating Printing**	**Storage/Standby**
Temperature (printer and toner cartridge)	59° to 89° F (15° to 32.5° C)	-4° to 104° F (-20° to 40° C)
Relative humidity	10% to 80%	10% to 90%

Acoustic Emissions (Per ISO 9296)

	Operator Position	**Bystander (1m)**	**Sound Power**
Printing	L_{pAm} 52dB(A)	L_{pAm} 46dB(A)	L_{WAd} 6.0 bels(A)
Power Save*	L_{pAm} <22dB(A)	L_{pAm} <22dB(A)	L_{WAd} <3.6 bels(A)

*In this mode, the printer is essentially quiet.

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications; however, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the of the following measures:

- Reorient or relocate receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician.

Note

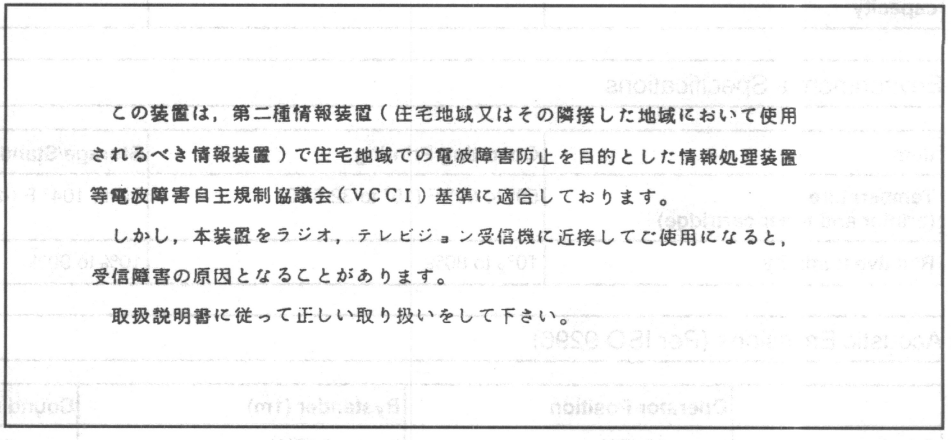
Any changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate this equipment.

Use of a shielded printer cable is required to comply within the Class B limits of Part 15 of the FCC rules.

VCCI Statement (Japan)

The VCCI statement, similar to the FCC regulations, is required in Japan.

Figure B-1



Laser Safety Statement

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. This printer is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this printer is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

CAUTION

Never operate or service the printer with the protective cover removed from the Laser/Scanner Assembly. The reflected beam, although invisible, can damage your eyes.

Ozone Emission

The HP LaserJet 5P and HP LaserJet 5MP printers do not use high-voltage corona wires in the electrophotographic process, and therefore, generate no measurable ozone gas (O_3). These printers instead use charging rollers in the toner cartridge and in the print engine.

EPA Energy Star Computers Compliance

The HP LaserJet 5P and 5MP printers are designed to conserve electricity by dropping from 165 W while printing to 5 W when in the Power Save Mode. The instant-power-save/instant-on capability of these printers makes a standby mode unnecessary. For maximum energy conservation, Hewlett-Packard recommends that the printer be turned off when it will not be used for more than a few hours. With this new, power-saving design, both models of the printer qualify for the U.S. Environmental Protection Agency's Energy Star Computers compliance.

The EPA, as a matter of policy, does not endorse any particular company or its products.

Laser Statement for Finland

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

HP LaserJet 5P / 5MP laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle.

Kirjoittimen on hyväksynyt Suomessa laserturvallisuuden osalta Sähkötarkastuskeskus. Laitteen turvallisuusluokka on määritetty valtioneuvoston päätöksen N:o 472/1985 ja standardin EN 60825 (1991) mukaisesti.

VAROITUS !
Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING !
Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO
HP LaserJet 5P / 5MP -kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !
Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle *laitteen ollessa* toiminnassa. Älä katso säteeseen.

VARNING !
Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 770-795 nm
Teho 5 mW
Luokan 3B laser

Declaration of Conformity

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	11311 Chinden Boulevard Boise, Idaho 83714-1021, USA

declares that the product

Product Name:	LaserJet 5P and LaserJet 5MP
Model Number:	C3150A and C3155A
Product Options:	All

conforms to the following Product Specifications:

Safety: EN 60950:1988 + A1, A2
EN 60825 laser class 1

EMC: CISPR-22:1985 / EN 55022:1988 class B[1]
EN 50082-1:1992
IEC 801-2:1991 / prEN55024-2:1992 - 3 kV CD, 8 kV AD
IEC 801-3:1984 / prEN55024-3:1991 - 3 V/m
IEC 801-4:1988 / prEN55024-4:1992 - 0.5 kV Signal Lines, 1 kV Power Lines

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

1 The product was tested in a typical configuration with Hewlett-Packard Personal Computer and Test Systems

Hewlett-Packard Company
Office of Quality Manager
Boise, Idaho USA
May 1, 1995

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Straße 130, D-7030 Böblingen (FAX: 49-7031-14-3143)

Media Specifications

Overview

You can use a variety of paper and other print media successfully with the HP LaserJet 5P or 5MP printer using the specifications and guidelines in this appendix. Media that do not meet these requirements may increase the incidence of paper jams, cause premature wear to the printer, and contribute to repair costs. Table C-1 shows the dimensions and weights of media supported by each of the paper trays.

Before purchasing any media or specialized forms in quantity, make sure your paper supplier obtains and understands the requirements specified in the *HP LaserJet Printer Family Paper Specification Guide* (HP part number 5002-1801). You may want to order this guide for your purchasing agent (see "Supplemental Documents" in Chapter 5).

Note

Hewlett-Packard neither warrants nor recommends the use of a particular brand of print media. Media properties are subject to change by the manufacturer and HP has no control over these changes.

It is possible that paper could meet all of the guidelines in this appendix and still not print satisfactorily. This might be due to improper handling, unacceptable temperature and humidity levels in the room, or other variables over which Hewlett-Packard has no control.

We recommend testing any paper before buying it in large quantities.

Caution

Using media outside these specifications may cause problems requiring service. This service is not covered by the Hewlett-Packard warranty or service agreements.

Table C-1

Tray 1	Dimensions*	Weight	Capacity**
Minimum Paper Size (custom)	3 x 5 in, 76 x 127 mm	Single sided: 16 to 42 lb (60 to 158 g/m^2)	100 sheets of 20 lb paper (75 g/m^2)
Maximum Paper Size (custom)	8.5 x 14 in, 216 x 356 mm		
Transparency	See minimum and maximum paper sizes listed above.	0.0039 in to 0.0045 in thick (0.099 to 0.114 mm)	75 typical
Labels		0.005 in to 0.007 in thick (0.127 to 0.178 mm)	50 typical
Envelopes	see "Envelopes" later in this chapter		10
Tray 2	**Dimensions***	**Weight**	**Capacity****
Paper, Letter	8.5 x 11 in, 216 x 279 mm	Single sided: 16 to 28 lb (60 to 105 g/m^2)	250 sheets of 20 lb paper (75 g/m^2)
Paper, A4	8.3 x 11.7 in, 210 x 297 mm		
Paper, Executive	7.3 x 10.5 in, 191 x 267 mm		
Paper, Legal	8.5 x 14 in, 216 x 356 mm		

* Your printer supports a wide range of media sizes. To print on special sizes, make sure to check your software for supported sizes.

** Capacity may vary depending on media specifications and environment conditions.

Paper and Preprinted Forms

For best results, use conventional 20 lb (75 g/m^2) xerographic paper. *Do not* use paper heavier than 42 lb (158 g/m^2) in Tray 1 or 28 lb (105 g/m^2) in Tray 2; misfeeds, stacking problems, paper jams, poor toner fusing, poor print quality, and excessive mechanical wear can result.

Make sure the paper is of good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges. Follow these guidelines to avoid paper jams, poor print quality, or damage to your printer:

- Do not use paper that is very rough, very smooth, or embossed. Such paper may cause feeding or print quality problems, and rough papers may have poor toner adhesion.
- Do not use paper with cutouts or perforations.
- Do not use letterhead papers that are printed with low-temperature inks, such as those used in some types of thermography.
- Use only colored papers or preprinted forms that use inks compatible with your printer's fusing temperature (392°F (200°C) for 0.1 second).
- Keep paper stored in moisture-proof wrapping to prevent changes in moisture content, which may cause poor print quality, jamming, and curling.
- Avoid paper with ragged cut edges to prevent feeding problems.
- Use long-grain paper to prevent feeding problems and minimize curl.

Adhesive Labels

Use only labels recommended for use in laser printers. To purchase labels, consult your HP authorized dealer or see the inside front cover of this manual for more information.

When selecting labels, consider the quality of each component:

- ***Adhesives:*** The adhesive material should be stable at the 392° F (200° C) temperature encountered in the printer's fusing process. None of the adhesive should be exposed between the labels.
- ***Label Arrangement:*** If possible, use labels with no exposed areas between labels. If labels with exposed areas *are* used, arrange them on the carrier sheet (the backing) so that they cover the entire page *with the exposed areas of the carrier sheet running lengthwise down the sheet.* Using label stock with spaces between labels often causes labels to peel off during the printing cycle, causing serious jamming problems. *Only use a sheet of labels once.*
- ***Label Curl:*** Labels must lie flat with no more than 0.5 in (13 mm) of curl in any direction.
- ***Poorly Manufactured Labels:*** Do not use labels with wrinkles, bubbles, or other indications of delamination.

Note Do not use labels in Tray 2.

Overhead Transparencies

Overhead transparencies used in HP LaserJet printers must be able to withstand the 392° F (200° C) temperature encountered in the printer's fusing process. When printing on overhead transparencies, use the Top Output Tray.

Caution Use only overhead transparencies recommended for use in laser printers. Unsuitable transparency film can melt inside the printer and cause severe damage to the printing mechanism.

To purchase transparency film, consult your HP authorized dealer or see the inside front cover of this manual for more ordering information.

Envelopes

You can print many types of envelopes with your printer. Some envelope styles perform better than others because their construction is better suited to feeding through a laser printer.

Envelope Construction

- ***Weight:*** The weight of the envelope paper should not exceed a 28 lb (105 g/m^2) rating or jamming may result.
- **Construction:** Envelopes should lie flat with less than 0.39 inch (10 mm) curl.
- ***Manufacture:*** Make sure envelopes are not wrinkled, nicked, or otherwise damaged.
- ***Sizes:*** Use only envelopes within the following sizes in Tray 1:
  - Minimum: 3.0 x 5.0 inches (76 mm x 127 mm)
  - Maximum: 8.5 x 14.0 inches (216 mm x 356 mm)

Double Side Seam Envelopes

Double side seam construction has vertical seams at both ends of the envelope rather than diagonal seams. This style generally performed adequately in Hewlett-Packard testing but may be more likely to wrinkle.

Envelopes with Adhesive Strips or Flaps

Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the heat and pressure of the fusing rollers in the printer. The extra flaps and strips may result in wrinkling or creasing and may cause jamming.

Caution

Never use envelopes with clasps, snaps, windows, coated linings, self-stick adhesives, or other synthetic materials. These items can severely damage your printer. Never try to print on both sides of an envelope. Jamming and printer damage can result.

Note

The paper width guide ensures that envelopes feed correctly into the printer. Envelopes must fit squarely and firmly between the paper width guide and the left side of Tray 1. If they do not, they may feed into the printer incorrectly. As a result, the envelopes may jam.

Do not print envelopes from Tray 2—printing envelopes from Tray 2 may result in a paper jam.

Card Stock

You can print many types of card stock with your printer, including Rolodex cards, index cards, postcards, and other specialty cards, such as invitations. Some card stock performs better than others because its construction is better suited to feeding through a laser printer.

Card Stock Construction

- ***Weight:*** The weight of the card stock should not exceed a 42-lb (158-g/m^2) rating or jamming may result.
  36–42 lb paper must be smoother than lighter stock 100-180 (Sheffield).
  16–36 lb paper can have a broader range of smoothness 100-250 (Sheffield).
- ***Construction:*** Card stock should lie flat with less than 0.2 inches (5 mm) curl.
- ***Manufacture:*** Make sure card stock is not wrinkled, nicked, or otherwise damaged.
- ***Sizes:*** Use only card stock within the following sizes in Tray 1:
  - Minimum: 3 x 5 inches (76 x 127 mm)
  - Maximum: 5.8 x 7.9 inches (148 x 200 mm)

Note

Before you load card stock in Tray 1, make sure it is regular in shape and undamaged. Also, make sure the cards are not stuck together.

Installing SIMMs

Overview

The HP LaserJet 5P printer has 2 MBytes of standard memory and three SIMM (single in-line memory module) slots for upgrading your printer with the following:

- The optional Adobe PostScript Level 2 language SIMM, which includes an additional 1 MByte of RAM. (This SIMM comes factory-installed in the HP LaserJet 5MP printer.)
- More printer memory (1, 2, 4, 8, and 16 MByte SIMMS).
- SIMM-based accessory typefaces, fonts, macros, and patterns.
- Other SIMM-based printer languages and other printer options.

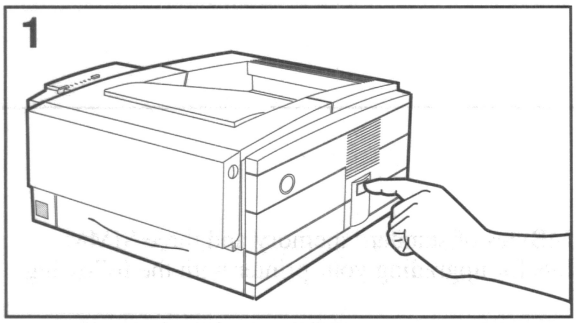
The HP LaserJet 5MP printer has 3 MBytes of standard memory and a factory installed Adobe PostScript Level 2 language SIMM. The printer has two additional SIMM slots for upgrading your printer with the following:

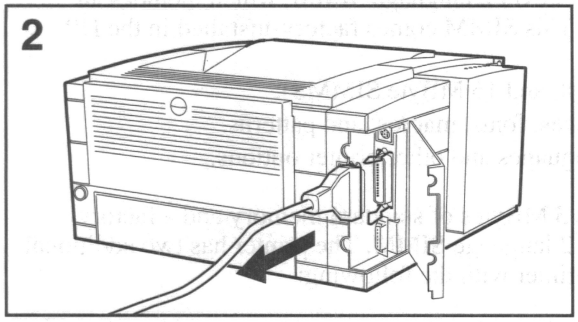
- More printer memory (1, 2, 4, 8, and 16 MByte SIMMS).
- SIMM-based accessory typefaces.
- Other SIMM-based printer languages and other printer options.

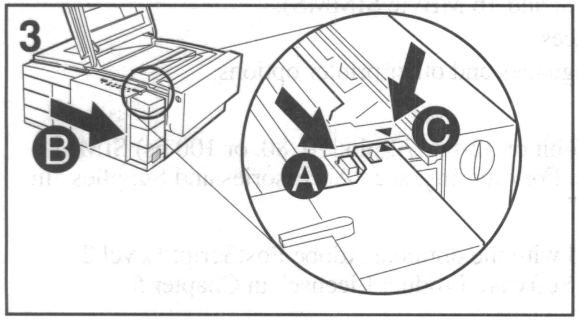
Note Use HP SIMMs or equivalent (36-bit or 32-bit, 72-pin; 70, 80, or 100 ns) SIMMs designed for HP LaserJet printers. For ordering, see "Accessories and Supplies" in Chapter 5, "Service and Support."

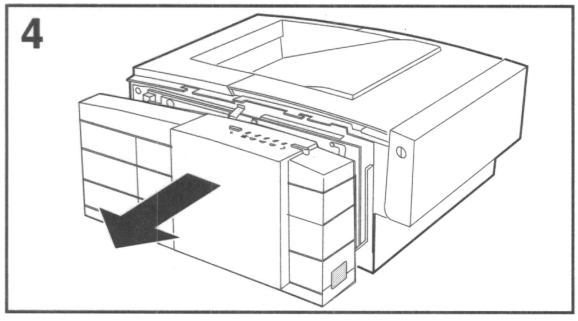
Note Before using the software shipped with the optional Adobe PostScript Level 2 language SIMM, review the "HP Software Product License" in Chapter 5.

Step A – To Open the Removable Side Panel









1 Turn the printer off and disconnect the power cord.

The printer is off when the on/off button is ***not*** *pushed in.*

2 Open the interface cable door, and disconnect all of the interface cables.

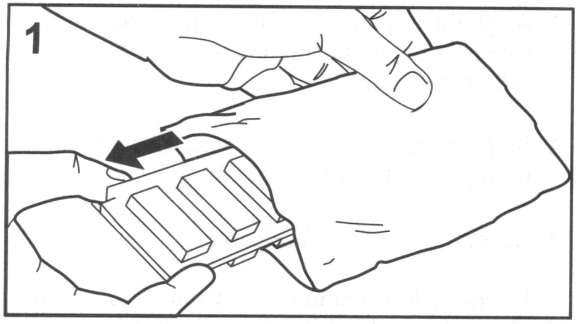
3 Open the top cover by pressing the Top Cover Release button on the side of the printer. Press the removable side panel release latch (A) and slide the removable side panel forward to the front of the printer (B) about 0.5 inches (1 cm) until the alignment arrows (C) line up.

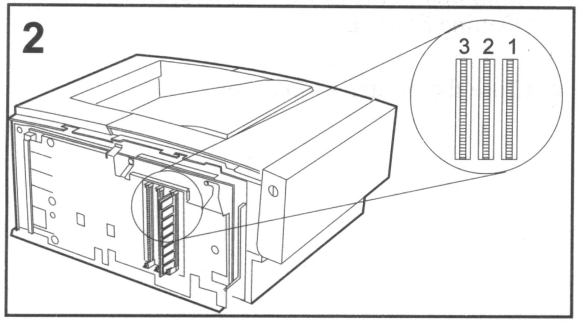
4 Pull the removable side panel away from the printer.

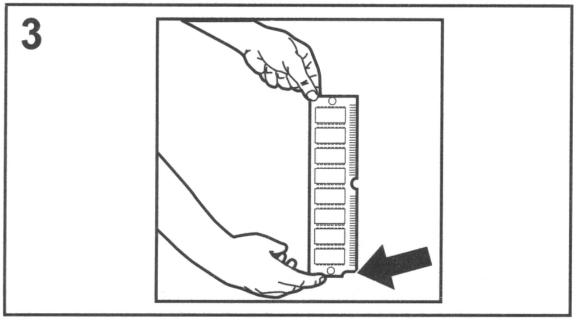
Caution

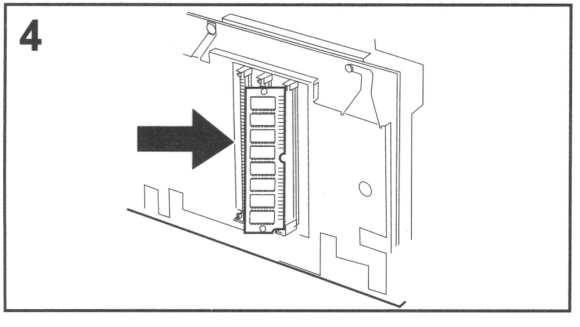
Before removing a new SIMM from its package or removing a SIMM from the printer, follow the static protection guidelines on the next page.

Step B – To Insert the SIMM









Caution

Even very small amounts of static electricity can damage the SIMM. When handling the SIMM, follow ***all*** the instructions below.

To protect the SIMM during installation, take the following precautions:

- Wear an antistatic wrist strap, or touch the surface of the antistatic package ***and*** any bare metal in the printer before removing the SIMM from its package.
- To prevent generation of more static electricity, avoid moving about the work area. Do not touch any other electronic devices, such as your telephone or your PC.
- Handle the SIMM carefully at all times.

1 Remove the SIMM from the antistatic package. **Do not flex the SIMM or touch any of its connection traces.**

2 Select the slot you want to use. (Use slots in this order—1, 2, 3.)

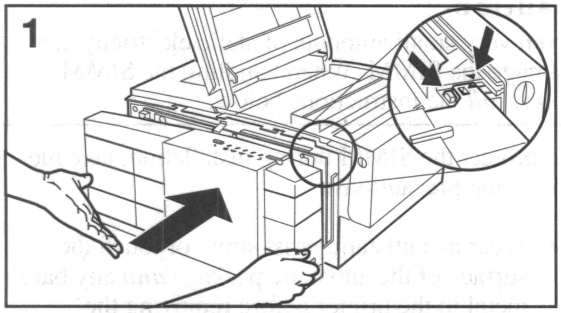
3 Align the notch on the bottom of the SIMM with the notch on the bottom of the connector in the slot, holding the SIMM at a 30-degree angle.

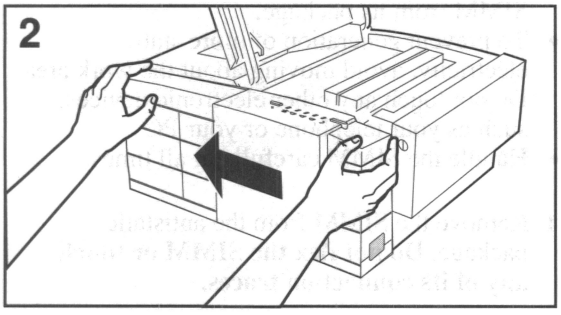
4 Push the SIMM into the back of the slot to seat it firmly.

5 Rotate the SIMM to the side until the clips on the edges of the slot snap into place (you will feel and hear a "click").

6 Check to make sure the SIMM is seated properly. If the SIMM is installed securely, the two side pegs on the SIMM latch will show through the two guide holes on the SIMM as shown.

Step C – To Replace the Removable Side Panel





1 Align the alignment arrow on the removable side panel with the alignment arrow on the side of the printer.

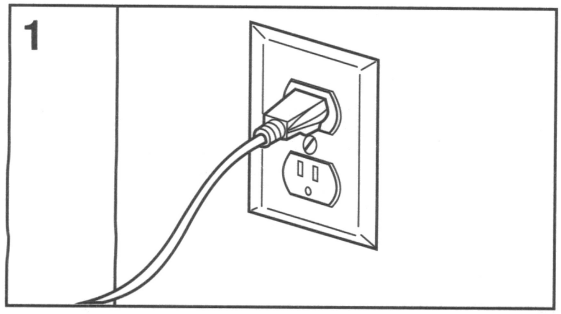
2 Slide the panel toward the back of the printer until you feel it seat firmly into place.

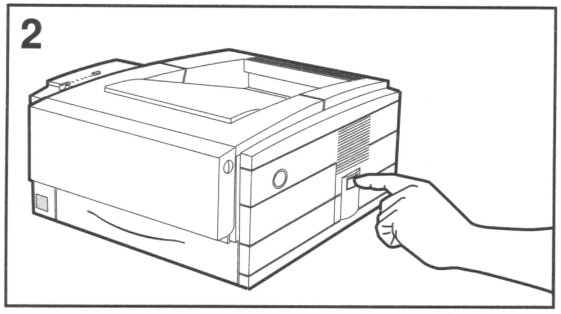
3 Reconnect the interface cables.

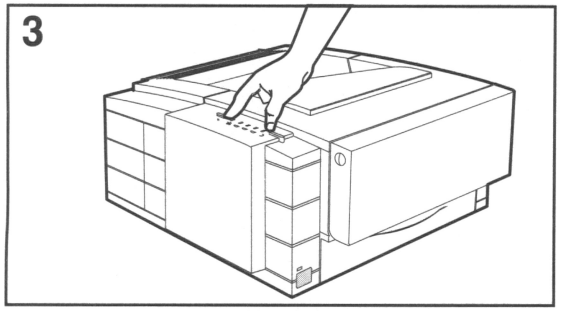
For more information, see "Connecting Your Computer to the Printer" in Chapter 1, "Getting Started."

4 Close the printer's top cover.

Step D – Checking the SIMM Installation







Follow this procedure to verify that the SIMM is correctly installed.

1 Reconnect the power cord.

2 Turn the power on.
The Status Panel lights "cascade" briefly (each light turns on and off sequentially), and then the Ready light turns on. (If a different light pattern appears, see Chapter 4, "Troubleshooting and Maintenance.")

3 Simultaneously press the GO and RESET buttons to print a self-test page.

4 Check the self-test page as follows:

- If you are installing additional printer memory, locate "RAM size" on the self-test page. This is the amount of memory installed in your printer. The amount is shown in Kbytes. Each 1,024 Kbytes equal 1 Mbyte.
- If you are installing another printer language, locate INSTALLED PERSONALITIES on the test print page and check for the presence of your option.

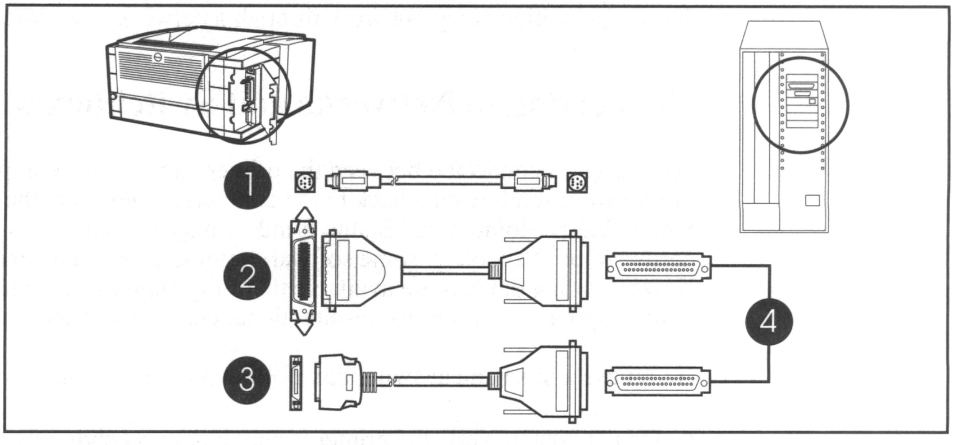
Printer Interfaces

Overview

Your HP LaserJet 5P or 5MP printer supports the following interfaces (see Figure E-1):

- Two IEEE-1284–compliant parallel ports at the back of the printer—one large B-type and one small C-type.
- One LocalTalk port at the back of the printer.
- One IrDA-compliant infrared port at the front of the printer (see Chapter 1).

Figure E-1



1. LocalTalk cable and connectors.
2. IEEE-1284 parallel cable and large (B-type) printer connector.
3. IEEE-1284 parallel cable and small (C-type) printer connector.
4. Host PC connector (A-type) (in the future C-type connectors may also be available on host PCs).

Caution Make sure that all power and interface cables on your printer and host computer are properly grounded and in compliance with local electrical codes.

The Parallel Printer Interfaces

These interfaces are compliant with IEEE-1284 specifications for "Compatibility Mode" and "Nibble Mode" or "HP Bi-tronics". To use advanced interface functions, such as bi-directional communication, the parallel port on your host PC must also be IEEE-1284 "Nibble Mode" compatible.

The small "C" connector offers IEEE-1284 II (level 2) electrical interfacing, i.e. support for cables up to 10 meter length. The large "B" connector supports standard cable lengths up to 3 meters.

The parallel interfaces can operate at speeds of up to 200 k Bytes per second. Use a high-quality, shielded IEEE-1284 compliant parallel interface cable to insure best performance and support of advanced interface functions such as bi-directional communication. Compliant cables are marked with "IEEE-1284" on the cable.

Applications such as the Remote Control Panel, Status Monitor, or the Status Window use the printer's parallel interface to send status information back to the computer (bi-directional communication). This requires a direct connection from the computer to the printer via a local parallel port (for example, LPT1:, LPT2:). These applications may not work through a network or a switching device.

Connecting to Networks and Switchboxes

Most devices connected between the printer and the host computer prevent the printer from sending data back to the computer. Therefore, the Remote Control Panel, Status Monitor, and Status Window may not work with networks, most hardware print spoolers, some software print spoolers, and some switchboxes. Newer sharing devices are available that fully support status feedback. Check with your supplier on support for bi-directional communication.

If you use a mechanical switchbox, follow these guidelines:

- Do not switch while the printer is spooling or receiving data (when the Ready light is flashing).
- Do not switch to a host computer that is turned off and then switch the computer on. The computer can appear to be sending data. If a 22 ERROR occurs, reset the printer.
- Use a surge protector.

Configuring the Parallel Ports

If you installed the DOS printer software, the setup program automatically configured the printer's parallel ports for you by adding a MODE line to your computer's AUTOEXEC.BAT file.

If you did not install this printer software, you need to modify the AUTOEXEC.BAT file to prevent communication timeout errors. To modify the AUTOEXEC.BAT file, use any DOS editor or any word-processing program that edits ASCII text files, and follow the instructions below.

For DOS versions 4.0 and later, add:

```
MODE LPT1:,,B
```

For DOS versions earlier than 4.0, add:

```
MODE LPT1:,,P
```

Note

The preceding examples assume that you are using printer port LPT1. For example, if you are using LPT2 or LPT3, replace LPT1 in the preceding examples with the appropriate printer port number.

Automatic I/O Switching

The printer automatically switches between all interfaces (parallel, infared, and LocalTalk) when multiple users share the printer.

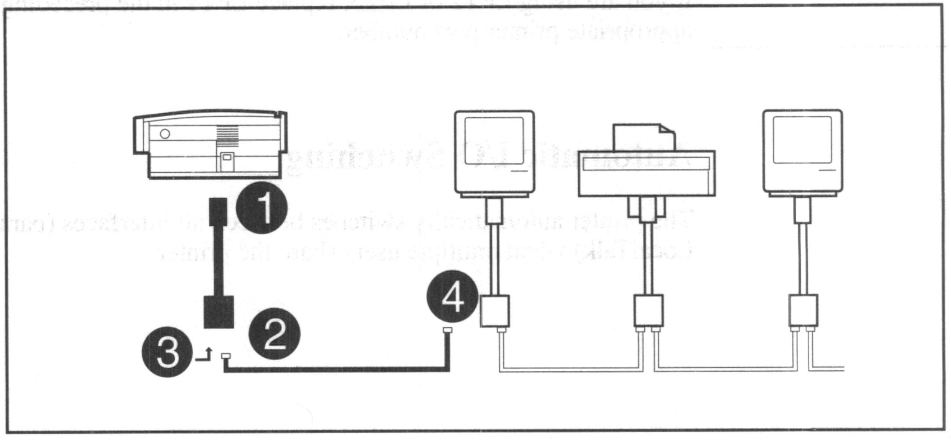
Connecting to a LocalTalk Network

This section describes how to connect your HP LaserJet 5MP (or 5P if optional Adobe PostScript SIMM is installed) printer to a LocalTalk network. For information on connecting your printer directly to your computer (you can have up to three printers directly connected to the printer at one time), see "Connecting Your Computer to the Printer" in Chapter 1, "Getting Started."

To connect your printer to a LocalTalk network, use a standard LocalTalk network cable and connector kit. Your printer does not come with a LocalTalk network cable—you must obtain your cables separately. You can use the HP LocalTalk Network Cable Kit (for the HP part number and ordering information, see "Accessories and Supplies" in Chapter 5, "Service and Support"). You will need one connector kit for each printer on your network, and another kit for each Macintosh computer on your network.

Connecting to the End of a LocalTalk Network

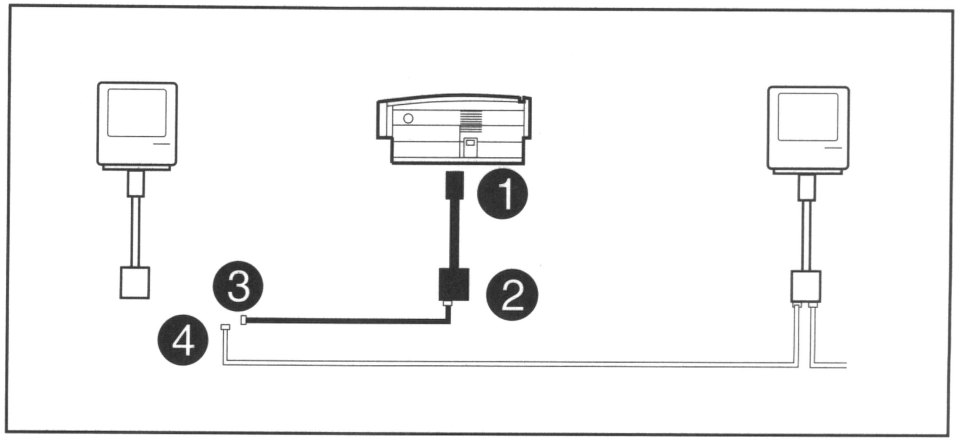
The following procedure describes how to connect your printer to the end of a LocalTalk network.



1 Disconnect the printer from its power source, and then insert the connector box cable into the LocalTalk port of your printer.
2 Insert one end of the cable into the new connector box.
3 If your connector box is not self-terminating, insert a terminating resistor into the connector box.
4 Insert the other end of the cable into the last connector box on the network (remove the terminating resistor if necessary).
5 Reconnect the printer to its power source.

Connecting to the Middle of a LocalTalk Network

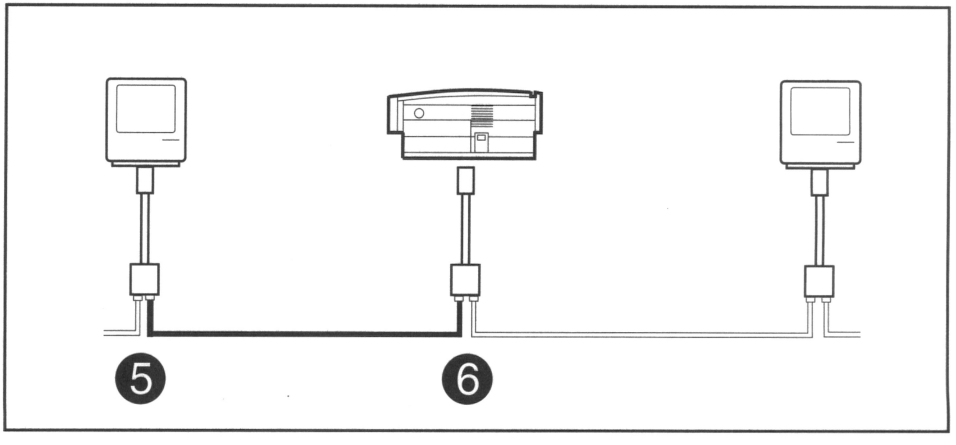
The following procedure describes how to connect your printer to the middle of a LocalTalk network.



1 Disconnect the printer from its power source, and then insert the connector box cable into the LocalTalk port of your printer.

2 Insert one end of the cable into the new connector box.

3 Set the other end of the new cable next to a connector box on the network.



4 Unplug one cable from the connector box on the network.

5 Insert the new cable into the connector box on the network.

6 Insert the cable you removed from the network into the new connector box, and then reconnect the printer to its power source.

Software Procedures

Overview

This appendix contains an overview of the software components supplied with your printer as follows:

- If you are a Windows user, see "Instructions for Windows Users."
- If you are a DOS user, see "Instructions for DOS Users."
- If you are a Macintosh user, see "Instructions for Macintosh Users."

The lists in this section list items that can be changed using the printer software; however, for specific information on feature descriptions and how to make the changes **refer to the on-line help that can be accessed from within each program.**

Instructions for Windows Users

Make sure that the *"HP LaserJet 5P Printing System for Windows 3.1 and 3.11"* or *"PostScript Software for Windows 3.1 and 3.11"* (shipped with the HP LaserJet 5MP or the optional Adobe PostScript SIMM) has been installed. The choice between these two software programs will depend on your need for PCL or PostScript. If you have not installed either software, refer to Chapter 1, "Getting Started."

The *"HP LaserJet 5P Printing System for Windows 3.1 and 3.11"* contains the following:

- HP LaserJet PCL Windows Printer Driver.
- HP FontSmart font manager for Windows.
- HP Status Window for Windows.

The *"PostScript Printer Software for Windows 3.1 and 3.11"* contains the following:

- Adobe PostScript Level 2 Printer Driver for Windows.
- HP FontSmart font manager for Windows.
- HP Status Window for Windows.

Printer Drivers for Windows

The HP PCL Printer Driver for Windows and Adobe PostScript Level 2 Printer Driver for Windows allow you to access the following commonly used features:

- Orientation
- Copies
- Paper Source
- EconoMode
- Graphics Quality (PCL Driver only)
- Resolution Enhancement technology (REt)
- Resolution
- Graphics Mode (PCL Driver only)
- Page Protection (PCL Driver only)
- Paper Size

Advanced Printer Configuration Features

Additionally, the HP LaserJet PCL Windows Printer Driver and the Adobe PostScript Level 2 Printer Driver for Windows allow you to access the following advanced printer configuration features:

- PJL Password
- I/O Buffering
- Test Pages
- Paper Handling
- Job Timeout
- Resource Saving
- Reset printer defaults
- Available Memory
- Print Density
- Adobe Memory Booster Technology (PostScript Only)

To change the default settings in either the HP LaserJet PCL Windows Printer Driver or the Adobe PostScript Level 2 Printer Driver for Windows:

1 From the Windows 3.1 and 3.11 Program Manager, double-click on the Main Group.
2 Double-click on the **Control Panel** icon.
3 Double-click on the **Printers** icon.
4 Ensure that the HP LaserJet 5P / 5MP is highlighted, then click **Setup**.
5 Make your changes.
6 Click **OK**.

For help within the HP LaserJet PCL Windows Printer Driver or the Adobe PostScript Level 2 Printer Driver for Windows, click on the **Help** button. Descriptions of the software features are included on-line.

Additionally, the HP LaserJet PCL Windows Printer Driver or the Adobe PostScript Level 2 Printer Driver for Windows can be accessed from most Windows applications by choosing **Print Setup** under the **File** menu within the application.

HP FontSmart

The HP FontSmart font manager provides you with an easy way to control and manage the fonts you use with your printer. You can use it to add fonts to or delete fonts from your Windows system. To access HP FontSmart follow these steps:

1 From the Program Manager in Windows 3.1 and 3.11, double-click the HP LaserJet Group
2 Double-click on the **HP FontSmart** icon.

You can also acce access it through a button in your printer driver (PCL only).

For help information, click on **Help.**

HP Status Window

The HP Status Window reports status on printer problems and error conditions directly to your computer screen (when the printer is connected directly to the parallel port). To access the HP Status Window follow these steps:

1 From the Program Manager in Windows 3.1 and 3.11, double-click the HP LaserJet Group.
2 Double-click on the **HP Status Window** icon.

For help information, click on **Help.**

You can control the following options from within the HP Status Window:

- Display of status while printing a job.
- Sound/audio played with messages.
- Turn the sound within the Status Window on or off.
- Placement of status messages on the screen.
- Turn the Status Window on or off.

For help information, click on **Help.**

Instructions for DOS Users

Make sure that the "*HP LaserJet 5P DOS Utilities*" software has been installed. If you have not installed this software, refer to Chapter 1, "Getting Started". The *"HP LaserJet 5P DOS Utilities"* consist of two pieces of software:

- Remote Control Panel (RCP).
- Status Monitor.

Remote Control Panel

If your software application does not support changing printer settings from within the application, you can use the Remote Control Panel.

Note

Some DOS applications, such as WordPerfect for DOS, may override settings made using the Remote Control Panel.

The Remote Control Panel allows you to access the following features:

- Copies
- Lines Per Page
- Orientation
- Paper Tray
- Paper Size
- Typeface
- Symbol Set
- Pitch
- EconoMode
- Density
- Resolution Enhancement technology (REt)
- Page Protection
- Auto Continue
- Job Timeout
- Personality
- Printer Reset
- Test Pages

To start the Remote Control Panel from DOS, make sure that the Remote Control Panel is in your path statement, and then at the DOS prompt type `RCP` and press `ENTER`.

For help information, click on **Help.**

Status Monitor

The Status Monitor reports printer status, problems, and error conditions directly to your printer screen (when the printer is connected directly to the parallel port). To access the Status Monitor follow these steps:

To start the Status Monitor from DOS, make sure that the Status Monitor is in your path statement, and then at the DOS prompt type `STAT` and then press `ENTER`.

You may check your PATH by typing PATH and then pressing ENTER. If the Status Monitor directory is not in your path, you will have to change to that directory to start the program.

For help information, click on **Help.**

Instructions for Macintosh Users

Make sure that the Printer Software for Macintosh has been installed. If you have not installed this software, refer to Chapter 1, "Getting Started."

PostScript Driver for Macintosh

When you install your printer software, two drivers are installed: one for GX printing, and one for non-GX printing. Refer to the "HP LaserJet 5MP Macintosh Notes Manual" for more information about these drivers. For additional information about GX printing, see your System 7.5 manual.

Normally you make changes to printer settings through your software application by selecting the File menu and the **Print** or **Page Setup** dialog boxes.

HP LaserJet Utility

The HP LaserJet Utility gives you more control over your printer without leaving your Macintosh. In addition, the HP LaserJet Utility allows you to download fonts and files. You can use the utility to access many printer features, including the following:

- EconoMode
- I/O Timeout
- Language Switching
- Number of Copies
- Resolution Enhancement technology (REt)
- PJL Password
- Paper Tray Priority
- Print Density
- Printer Name
- Resolution
- Test Pages

To access the HP LaserJet Utility follow these steps:

1 Open the HP Utility Folder located on your hard disk.

2 Double click the **HP LaserJet Utility** icon.

For help information, refer to the on-line help in the "HP LaserJet Utility."

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Printed in USA 5/95

Manual Part No.
C3150-90901

Printed on
Recycled Paper